

Service  
Service  
**Service**

**LC4242**<sub>/17/40</sub>

**LC4246**<sub>/17/40</sub>

**Hopper XG20 (Impact)**

# Service Manual

## Contents

## Page

1.	Safety guidelines	1-1
2.	Specifications	2-1
3.	Warnings & Notes	3-1
4.	Mechanical instructions	4-1
5.	Block diagrams, Wiring diagram & Oscillograms	5-1
6.	Diagrams & PWB layouts	6-1
7.	Directions for use	7-1
8.	Alignments	8-1
9.	Parts lists	9-1



# 1. Safety guidelines

## IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company\*\* Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

\*\* Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.

## WARNING

Critical components having special safety characteristics are identified with an ▲ by the Ref. No. in the parts list and enclosed within a broken line\* (where several critical components are grouped in one area) along with the safety symbol ▲ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

\* Broken Line — — — — —

## 2. Specifications

LC4242/4246

2-1

### Technical specifications

LCD	: 3x 0.9" HT Poly Silicon Active Matrix : 2,359,296 pixels, RGB stripe
Brightness	: 1000 ANSI Lumen (Impact 1250)
Contrast	: 250:1 (Black/White) (Impact 200:1)
Lamp	: UHP 150 compact; End user replaceable, up to 2000 hours
Lens	: F1.8 - 2.2; f= 38-50 mm : Manual zoom x1.3; Manual focus : Projection distance 1.1 - 11 m; Diagonal (44-440)"
Specifications	: Longest life and "virtually" constant light output over entire lamp life projection lamp : Full automatic Multi Scan data input handling, VGA up to SXGA resolutions to full screen (Frame Buffer) : Intuitive graphic user interface for ease of use : Full PC control via ergonomic RC unit : Fully Plug and Play compatible (DDC 1/2b) : Line doubling technology for perfect video performance : Auto image : Ceiling mount (Full Mirror) / Standby
Dimensions	: 315 x 109 x 254 mm (WxHxD); 9 dm : 3
Weight Nett.	: 5,5 kg /ca 12 lbs.
Package	: Hopper XG20 : Lens-cap : VGA cable (2m) + programmable MAC adapter : Audio Video Cinch Cable (2m, Video/Audio stereo) : Scart adapter; scart to RCA video and stereo audio : Power cord (3m) : Remote control + 3x AA batteries : Projector Carrying Bag : DFU on CD-ROM
Model	: LC 4042/17 (USA) : LC 4042/40 (rest of the world) : LC 4046/17 (USA) : LC 4046/40 (rest of the world)

### Input/Output Capability

#### INPUT SIGNALS

Video	: NTSC 3.58, 4.43/PAL-BG, N, M/Secam
Data	: PC and MAC compatible, Multi scan VGA, SVGA, XGA, SXGA full screen SVGA display (Frame Buffer); Auto Identification; Hor. scan rate up to 108 kHz; Vert. refresh rate up to 120 Hz.
Power In	: 120-240 V (Full range); 50/60 Hz; 240 W

#### INPUT CONNECTIONS

Video	: S-Video (Y/C DIN); Video (Cinch); Stereo Audio (2x Cinch)
Data	: Mini sub-D data (15 pin)/PC, USB
Mains	: Mains input socket (3 pin)

#### OUTPUT CONNECTIONS


Audio	: Stereo Audio (M3,5 stereo jack) : USB
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### Special features

- 1000 Ansi Lumen (Impact 1250)
- Quiet - a quarter of the noise of current projectors (Sound Pressure Level 33 decibels)
- Manual zoom / focus
- Ceiling mountable
- Auto Voltage - automatic worldwide compatibility
- Best picture performance - 1000 Ansi Lumen, longest brightness over time, 85% picture homogeneity
- Full automatic Multi Scan data input handling, VGA up to SXGA resolutions without information loss.
- Philips UHP Lamp; 150W up to 2000 hours, lamp life with "virtually" constant light output for a perfect picture quality
- Philips Total Assurance:
  - reliability
  - robust design
  - free technical support. (toll-free)

### 3. Warnings & Notes

#### Warnings

1. Safety regulations require that the unit should be returned in its original condition and that components identical to the original components are used. The safety components are indicated by the symbol ▲.
2. **ESD**   
All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten the life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the earth of the unit. Keep components and tools also at this same potential.
3. When repairing a unit, always connect it to the mains voltage via an isolating transformer.  
The lamp supply and the lamp housing are not mains isolated.
4. Be careful when taking measurements in the high-voltage section.
5. Never replace modules or other components while the unit is switched on.
6. When making settings, use plastic rather than metal tools.  
This will prevent any short circuits and the danger of a circuit becoming unstable.
7. After repair the wiring should be fastened once more in the cable clamps for this purpose.
8. In order to prevent measuring errors, the heat sinks should not be used as reference points for measurements.
9. The Lamp house and the lamp get hot during operation.  
Please ensure that they are cooled down before servicing.
10. The lighthouse (optical part) is extremely sensitive to dust.  
This part should only be opened in a dust-free environment (class 100 according to the US federal standard 209).

#### Notes

1. The direct voltages and oscillograms should be measured with regard to earth (4 ), or hot earth (5 ) as this is called.
2. The direct voltages and oscillograms shown in the diagrams should be measured:
  - For testpoints Txxxx VIDE;  
using a video colour bar.
  - For testpoints Txxxx DATA;  
using a data greyscale.
  - For testpoints Txxxx DRB;  
using an internal greyscale.
  - For testpoints Txxxx AUD;  
using an audio signal of 1 kHz.
3. The semiconductors indicated in the circuit diagram and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.



## 4. Mechanical instructions

LC4242/4246

4-1

### 4.1 Remove the bottom cover (fig. 4.1)

Remove the two feet (A).  
Remove the two fixing screws (B).  
Now remove the bottom cover.

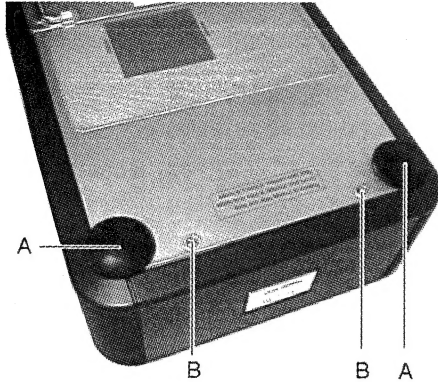


Fig. 4.1

### 4.2 Removing the rear cover (fig. 4.2 and 4.3)

Remove the screw (C) fixing the back cover.  
Remove the back cover. If necessary use a screwdriver to lift the cover a little.

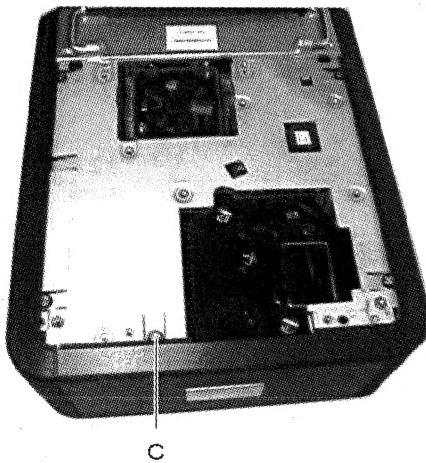


Fig. 4.2

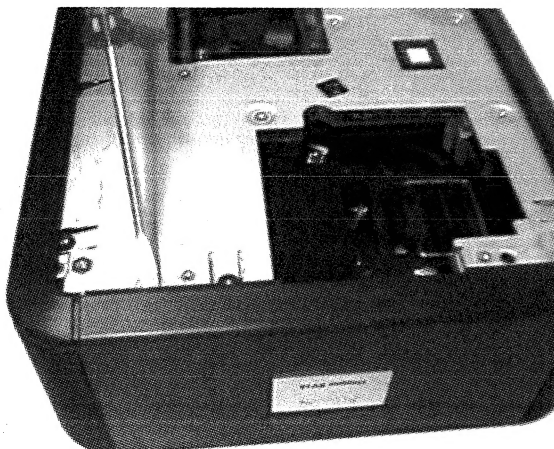


Fig. 4.3

### 4.3 Removing the side covers (fig. 4.4 and 4.5)

Remove the 4 screws (D) fixing the side covers.  
Remove the 2 screws (E) fixing the side cover grills.  
Remove the side covers. If necessary use a screwdriver to lift the covers a little.

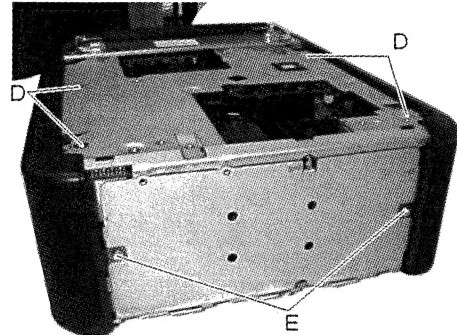


Fig. 4.4

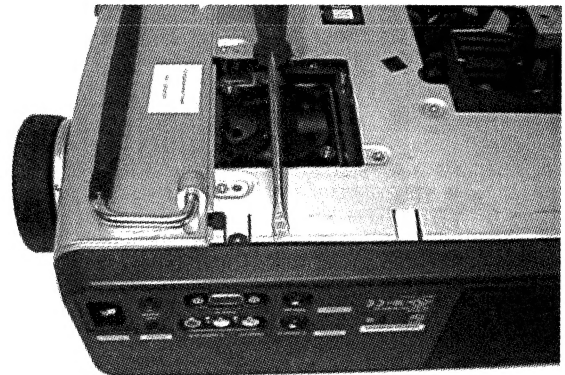


Fig. 4.5

### 4.4 Removing the top cover (fig. 4.6, 4.7 and 4.8)

Remove the rubber focus ring by pulling it off.  
Remove the zoom ring by removing the two screws (G) with a small cross head screwdriver.  
Remove the 6 screws (H) fixing the top cover.  
Remove the top cover carefully, and loosen the flatcable (I) from its connector.

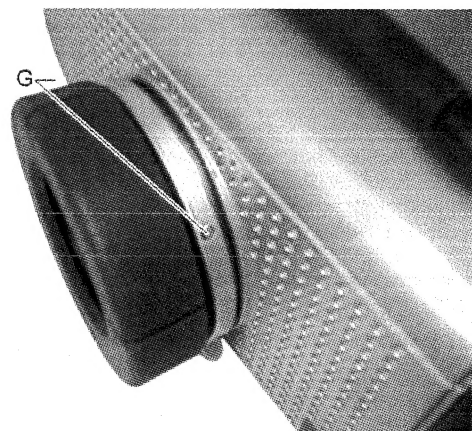


Fig. 4.6

#### Note:

With this wire disconnected the projector can not be controlled.

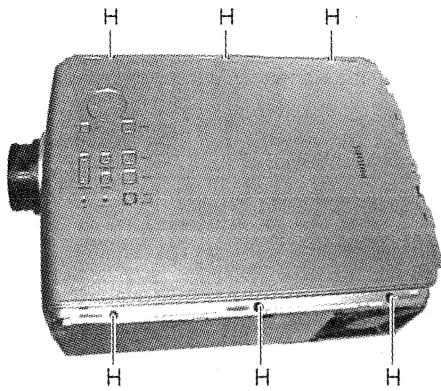


Fig. 4.7

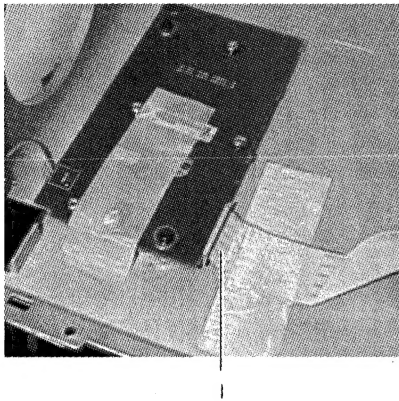


Fig. 4.8

#### 4.5 Removing the metal shield (fig. 4.9 and 4.10)

Remove the 8 screws (J) in the top.  
Remove the 9 screws (K) in the rear.  
Now carefully remove the shield. Ensure that the flatcable is not damaged when fed through the hole.

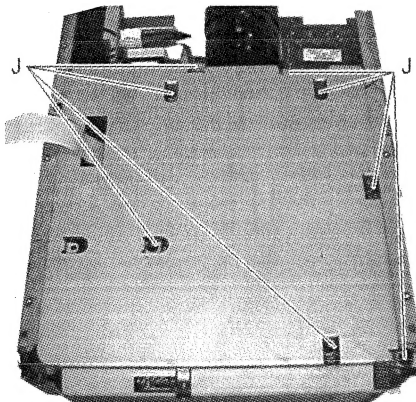


Fig. 4.9

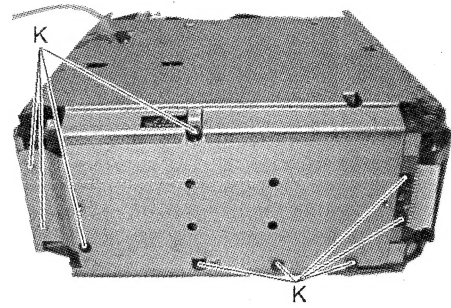


Fig. 4.10

#### 4.6 Removing the mains filter (fig. 4.11)

Remove the two screws (L), and then remove the mains filter.

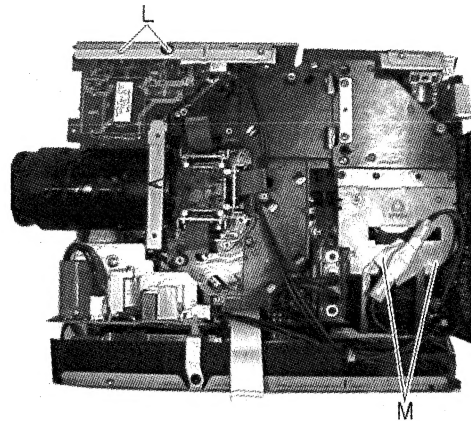


Fig. 4.11

#### 4.7 Removing the temperature switch (fig. 4.11)

Remove the tape (if present) and then the 2 screws (M) fixing the switch.

#### 4.8 Removing the lighthouse (fig. 4.12)

Remove the 5 screws (N) fixing the lighthouse.  
Carefully lift the lighthouse, and remove the fan connection wire in the bottom.

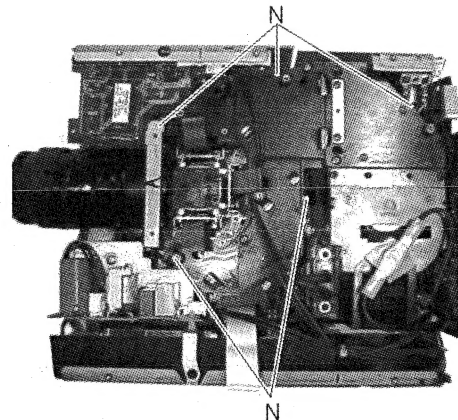


Fig. 4.12

#### 4.9 Removing the Power supply (fig. 4.13)

Remove the 3 screws (O) fixing the power supply.  
Loosen the fixing lug (P).  
Loosen the connectors (Q).  
Now the power supply can be removed.

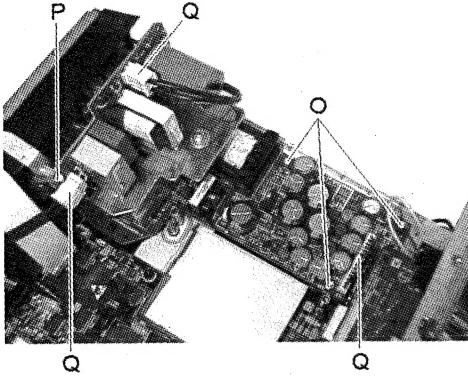


Fig. 4.13

#### 4.10 Removing the lamp supply (fig. 4.14)

Loosen the 4 fixing lugs (R).  
Now remove the lamp supply.

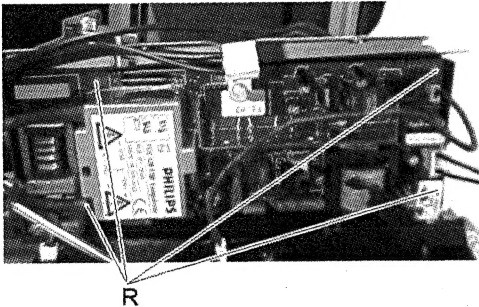
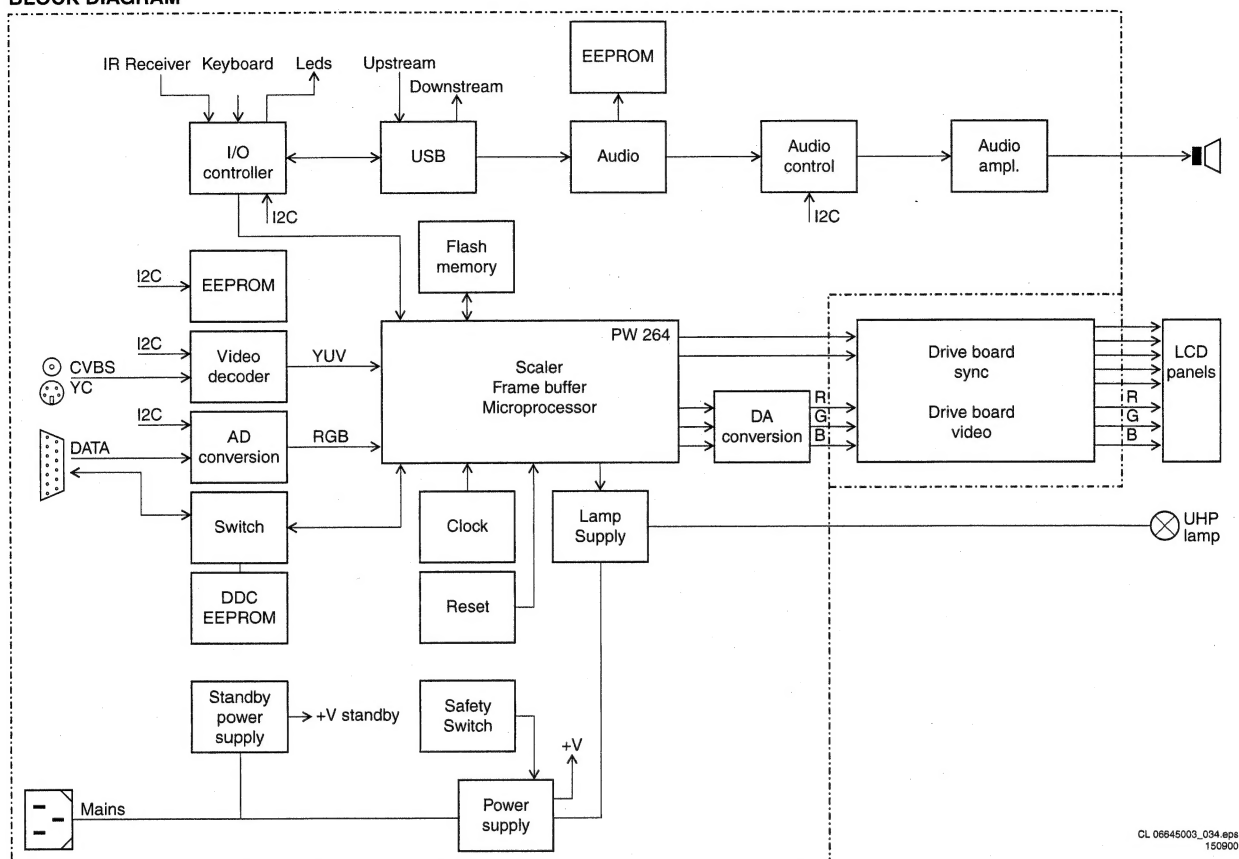


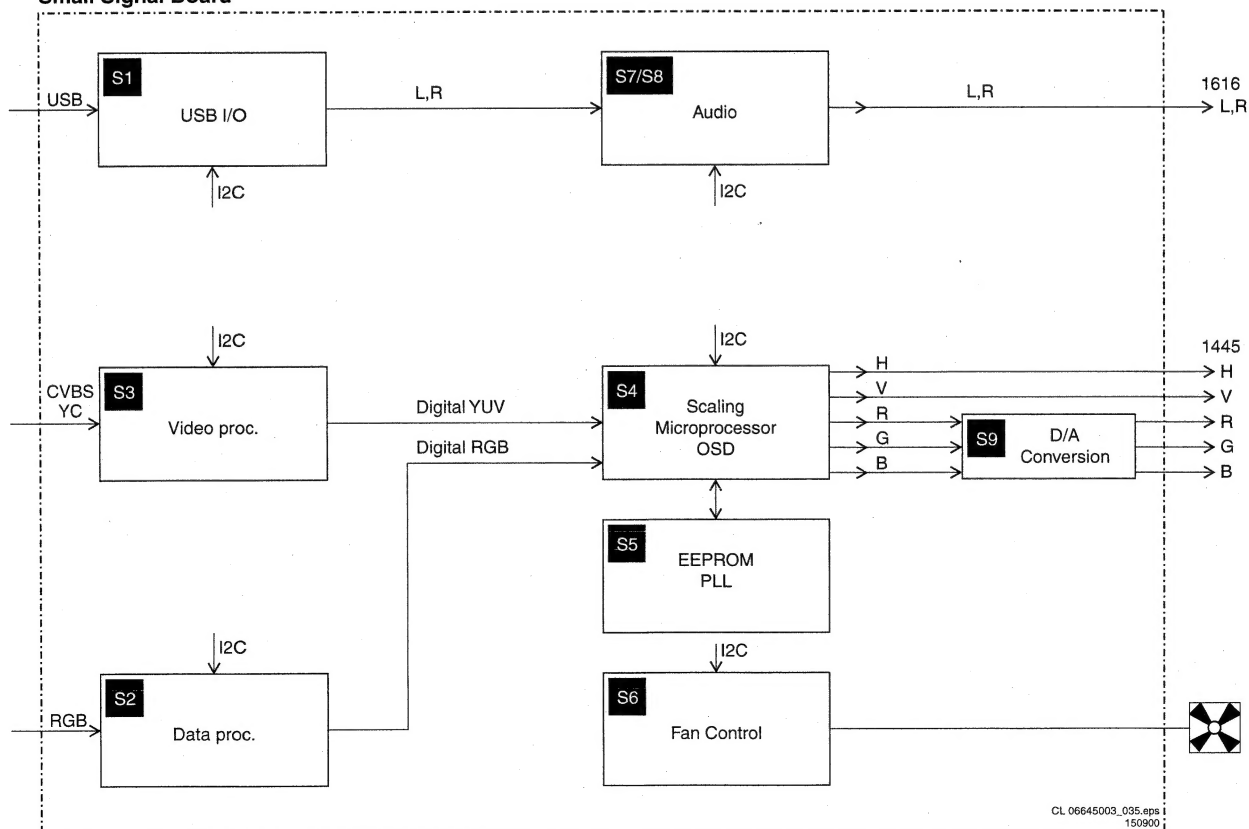
Fig. 4.14

## 5. Block diagrams, Wiring diagram & Oscillograms

**BLOCK DIAGRAM**

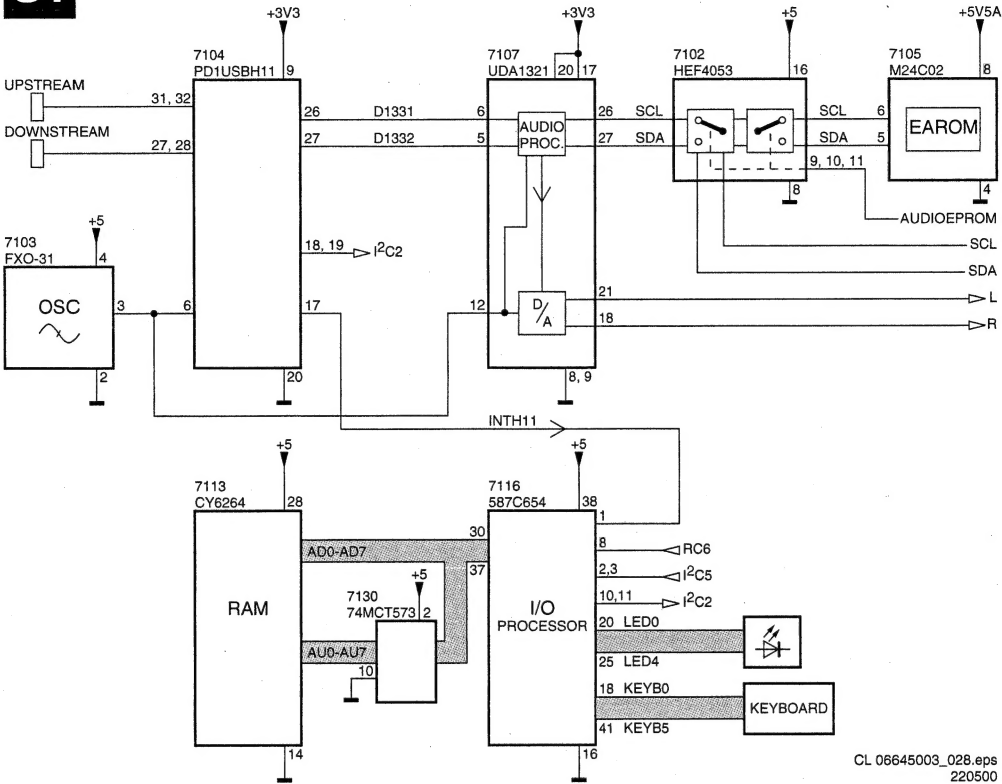


**Small Signal Board**

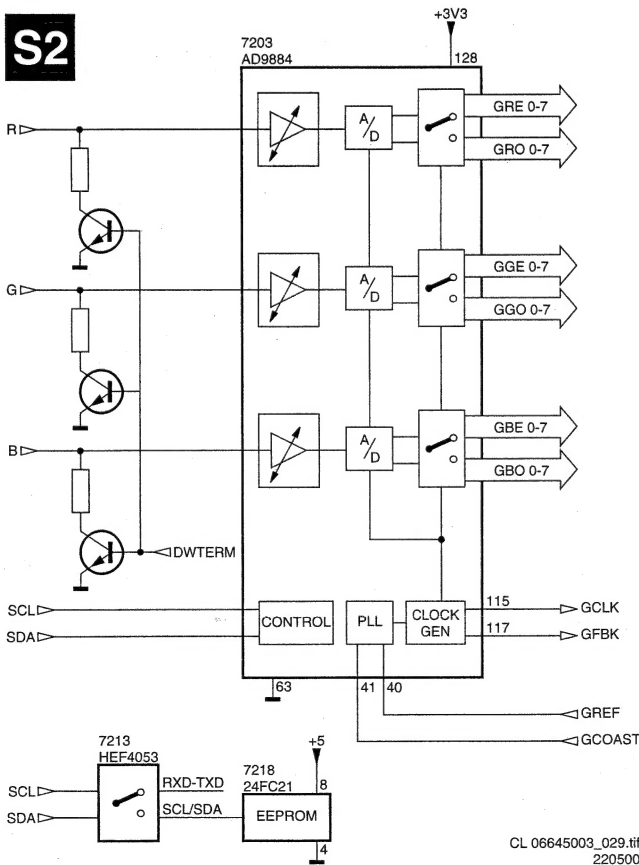


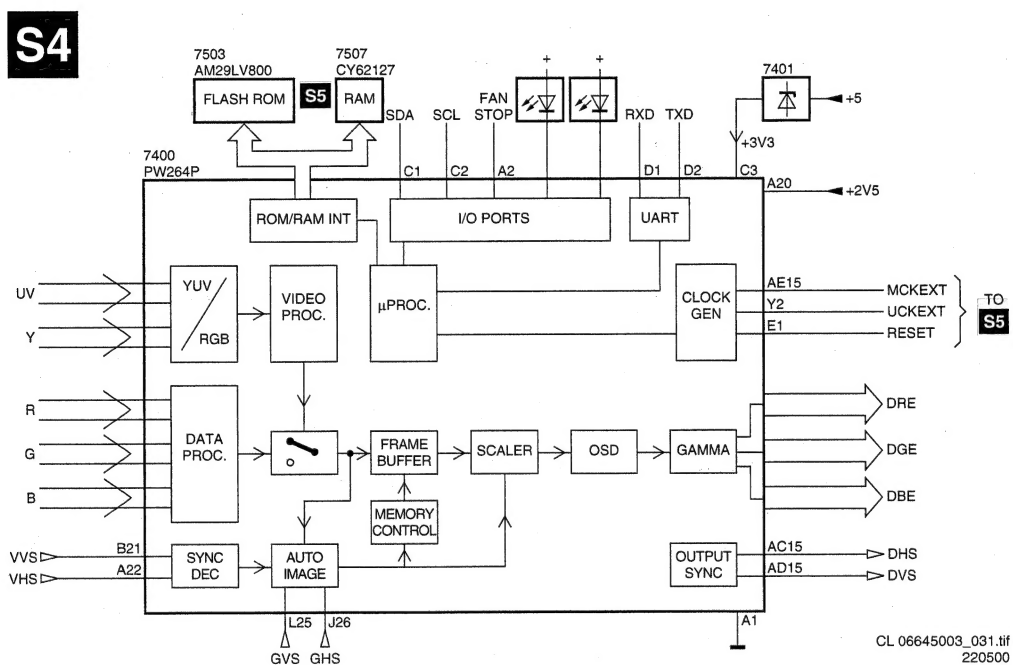
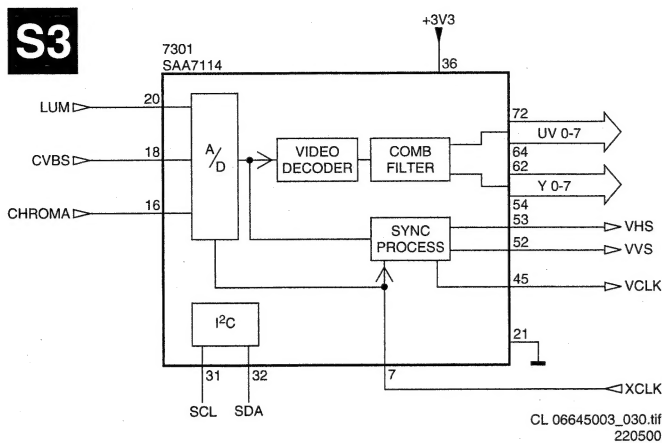
Block diagrams

S1



S2



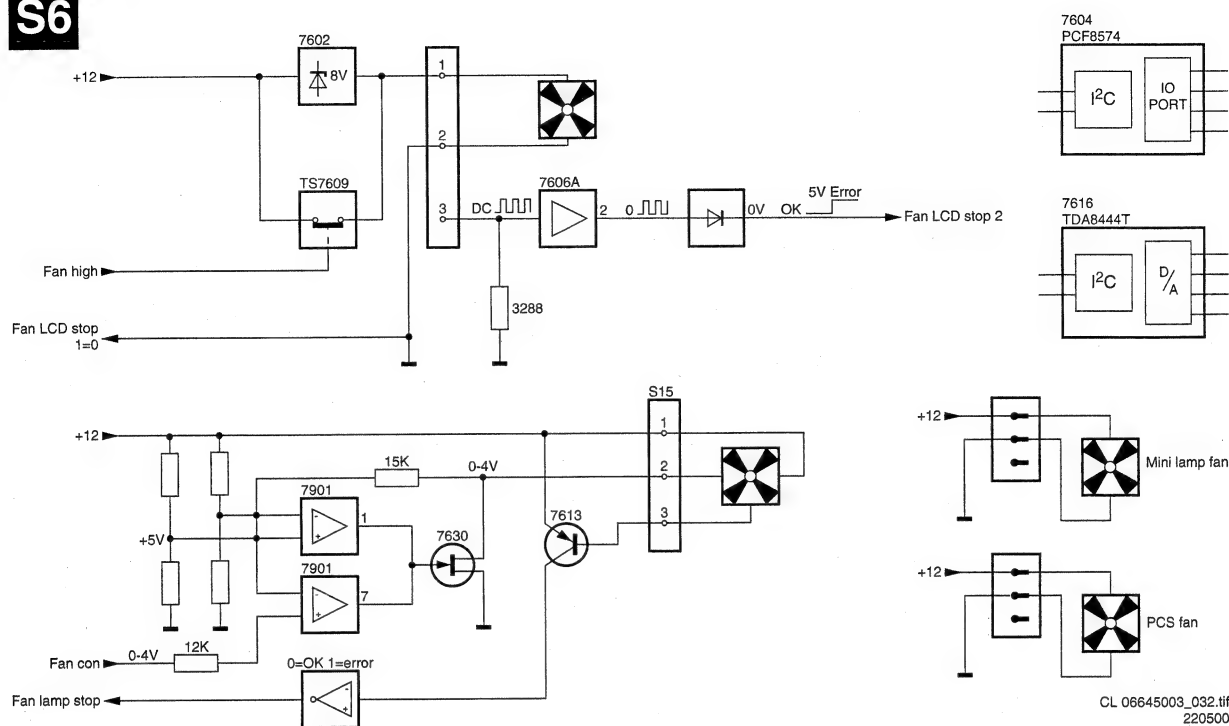


## Block diagrams

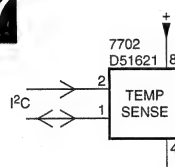
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5-4

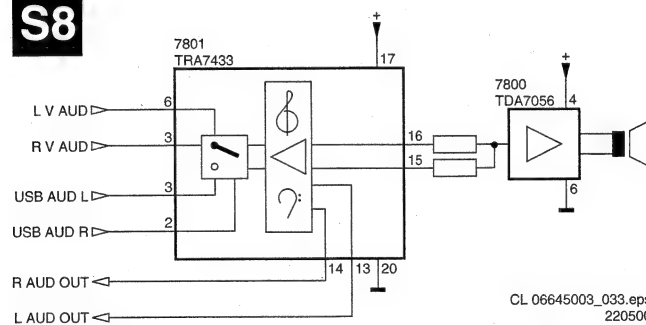
S6



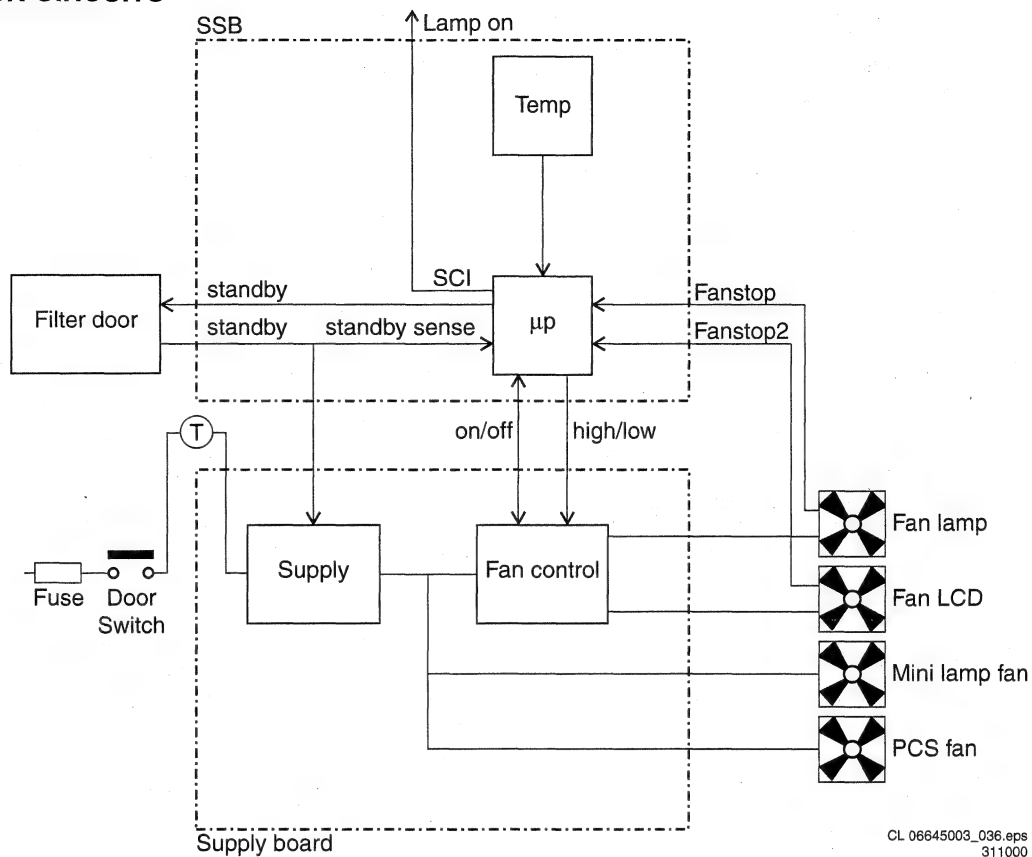
**S7**



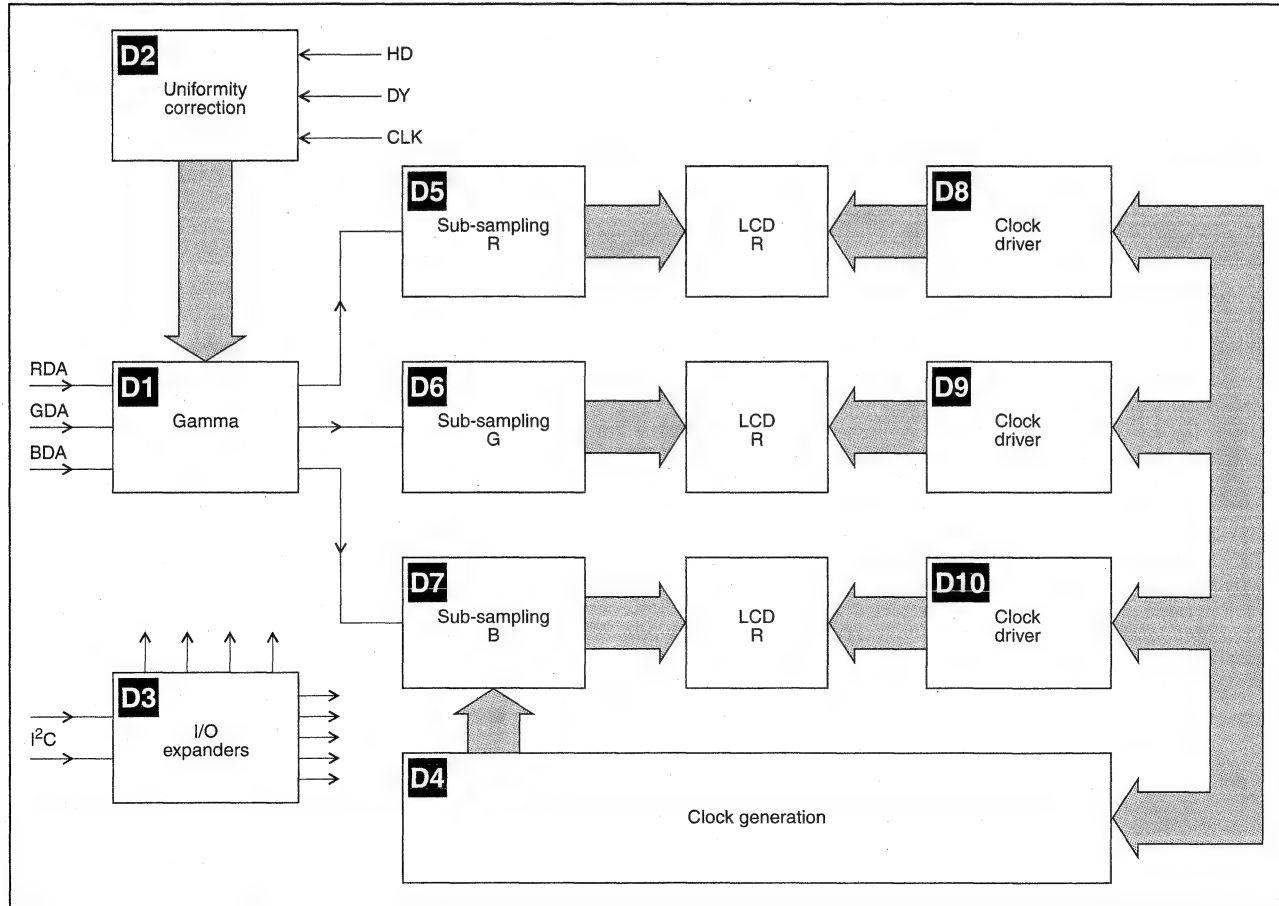
S8



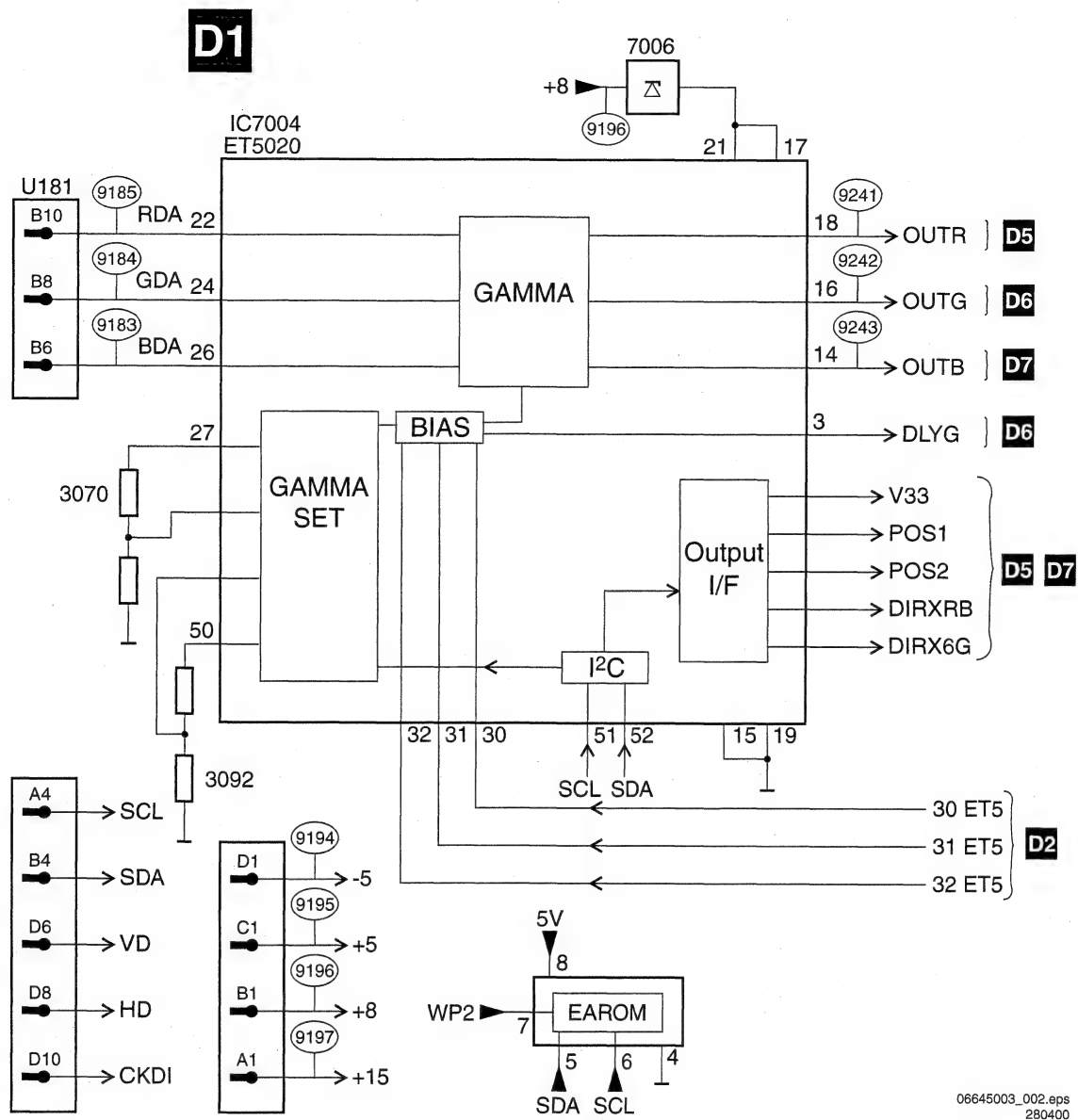
## PROTECTION CIRCUITS



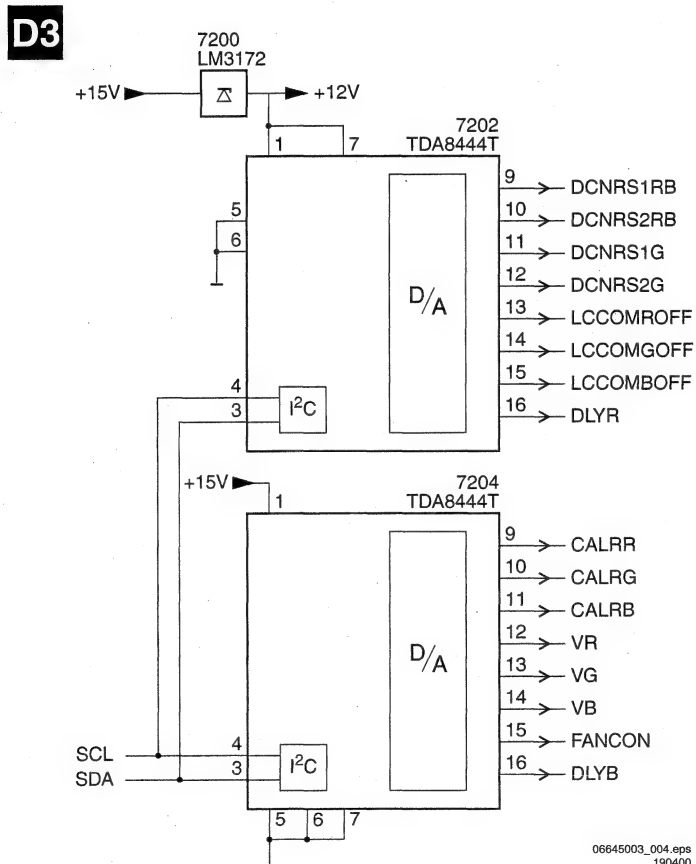
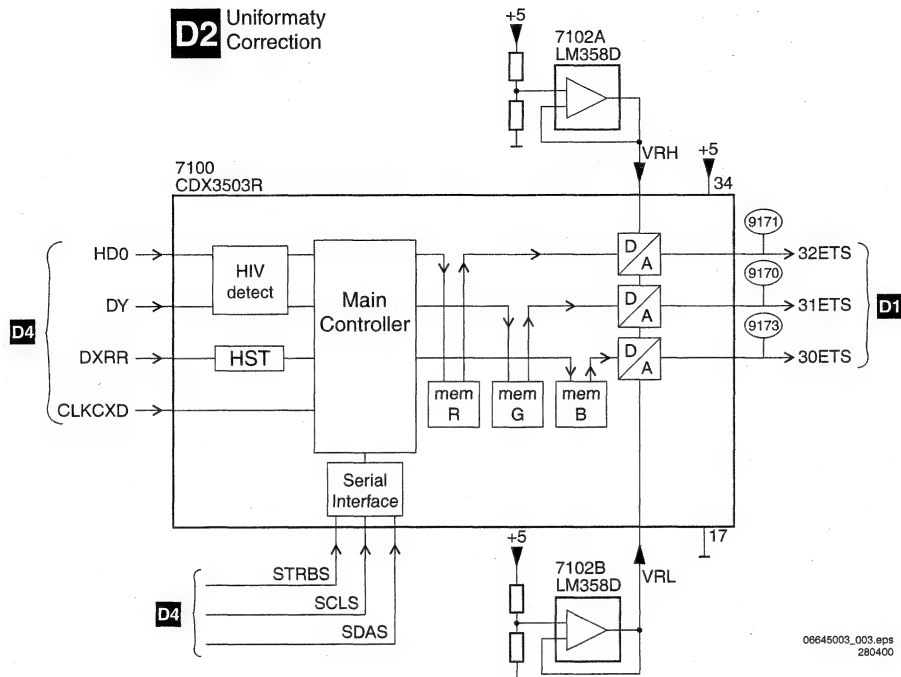
## LCD DRIVE BOARD





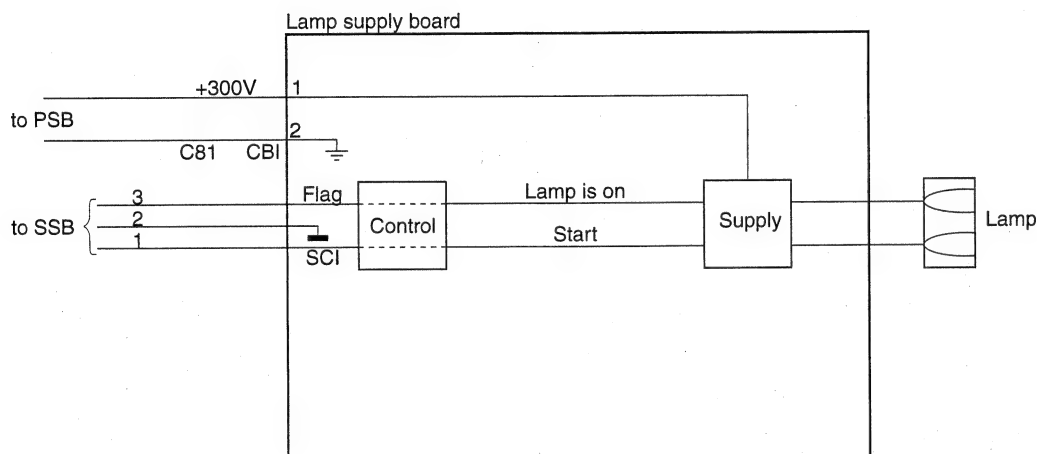
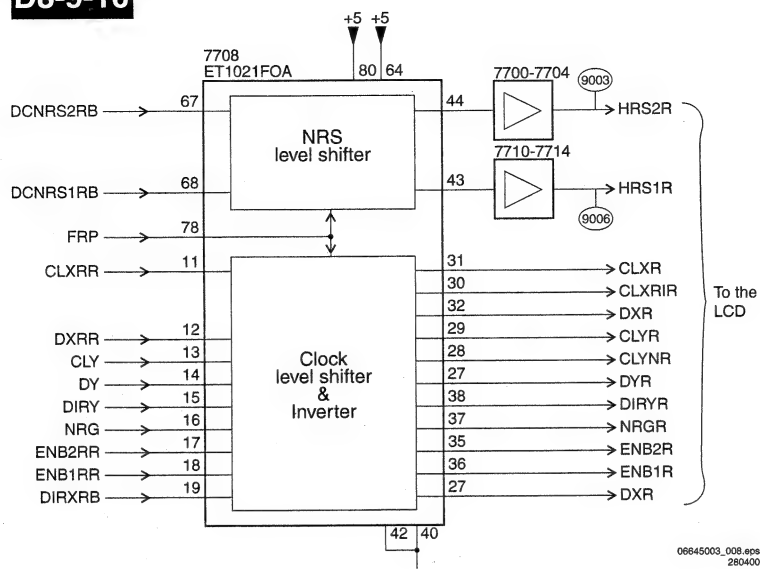


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280400

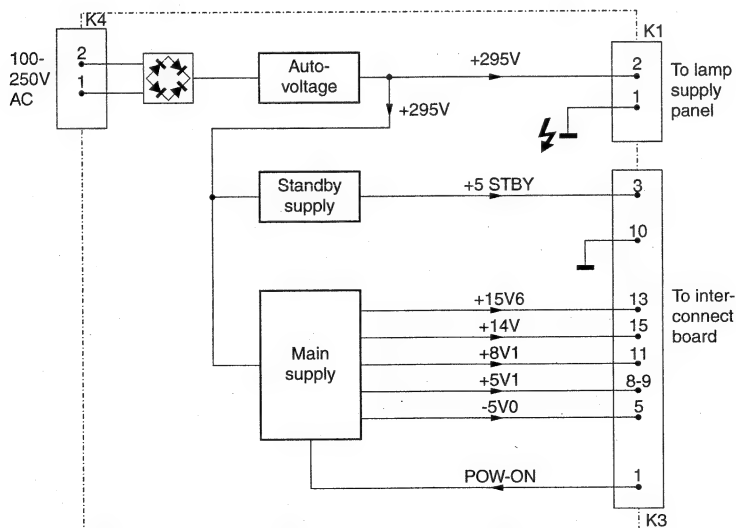




D8-9-10

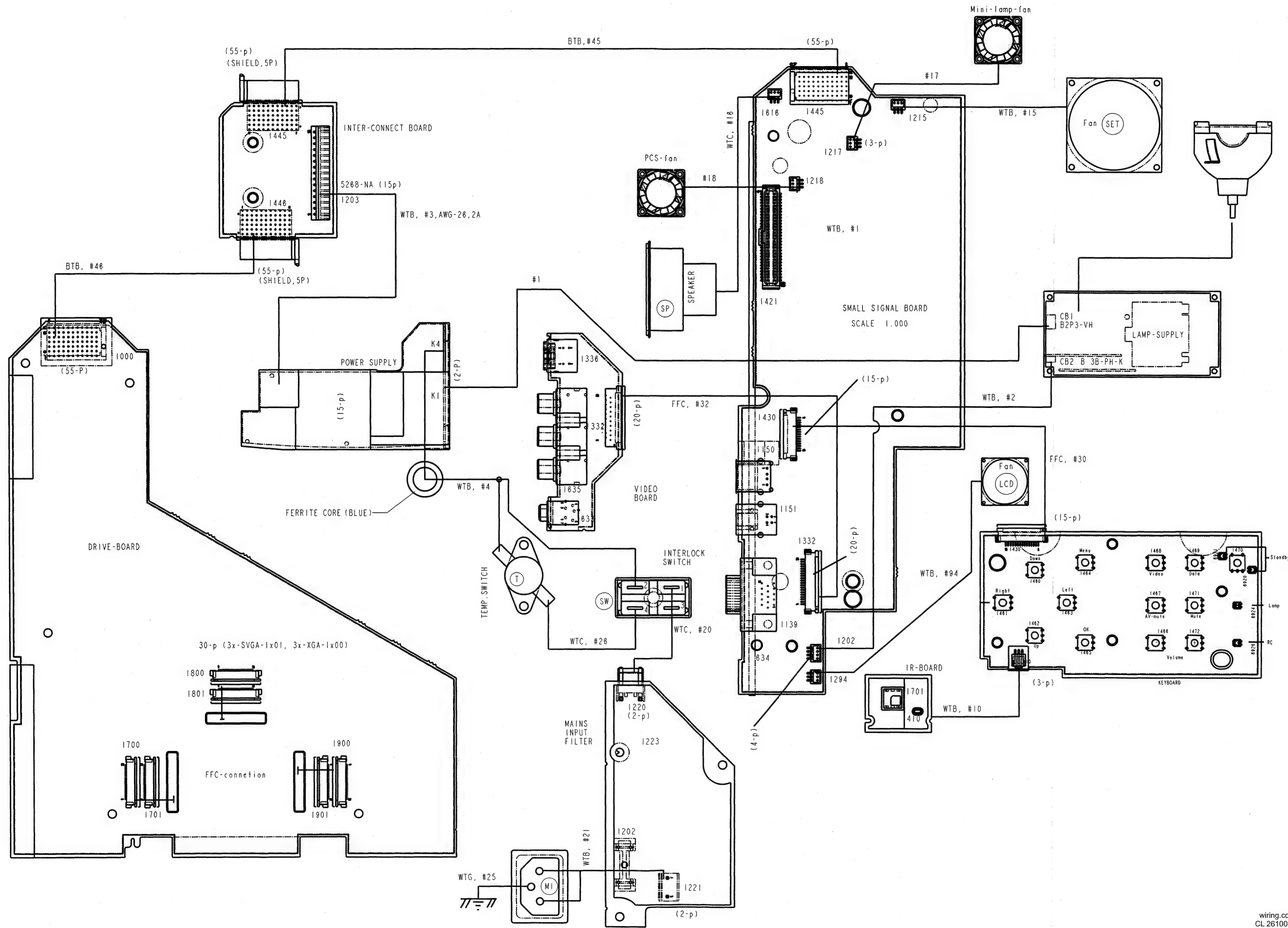


POWER SUPPLY BOARD



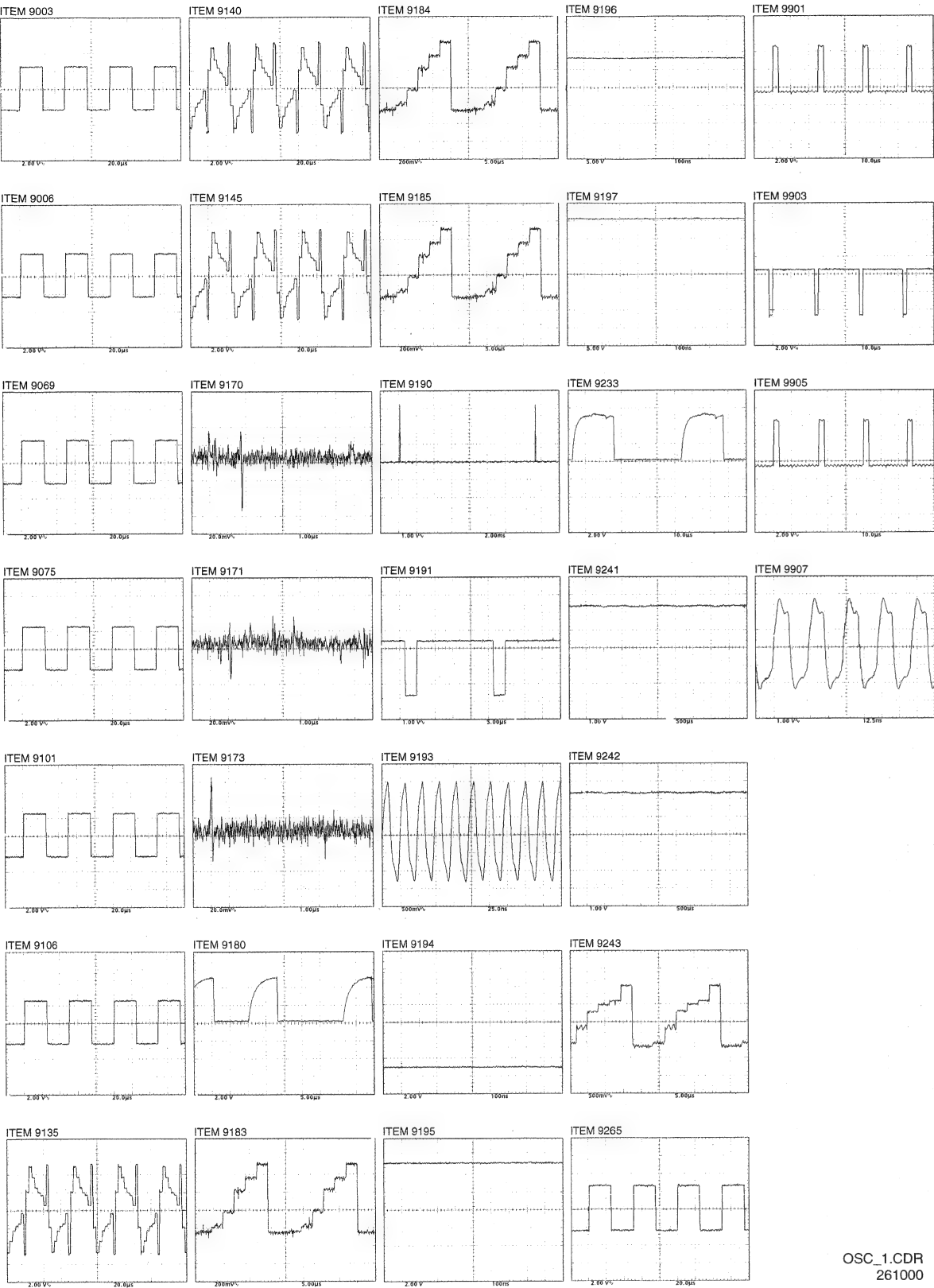
Wiring diagram

LC4242/4246 5-10

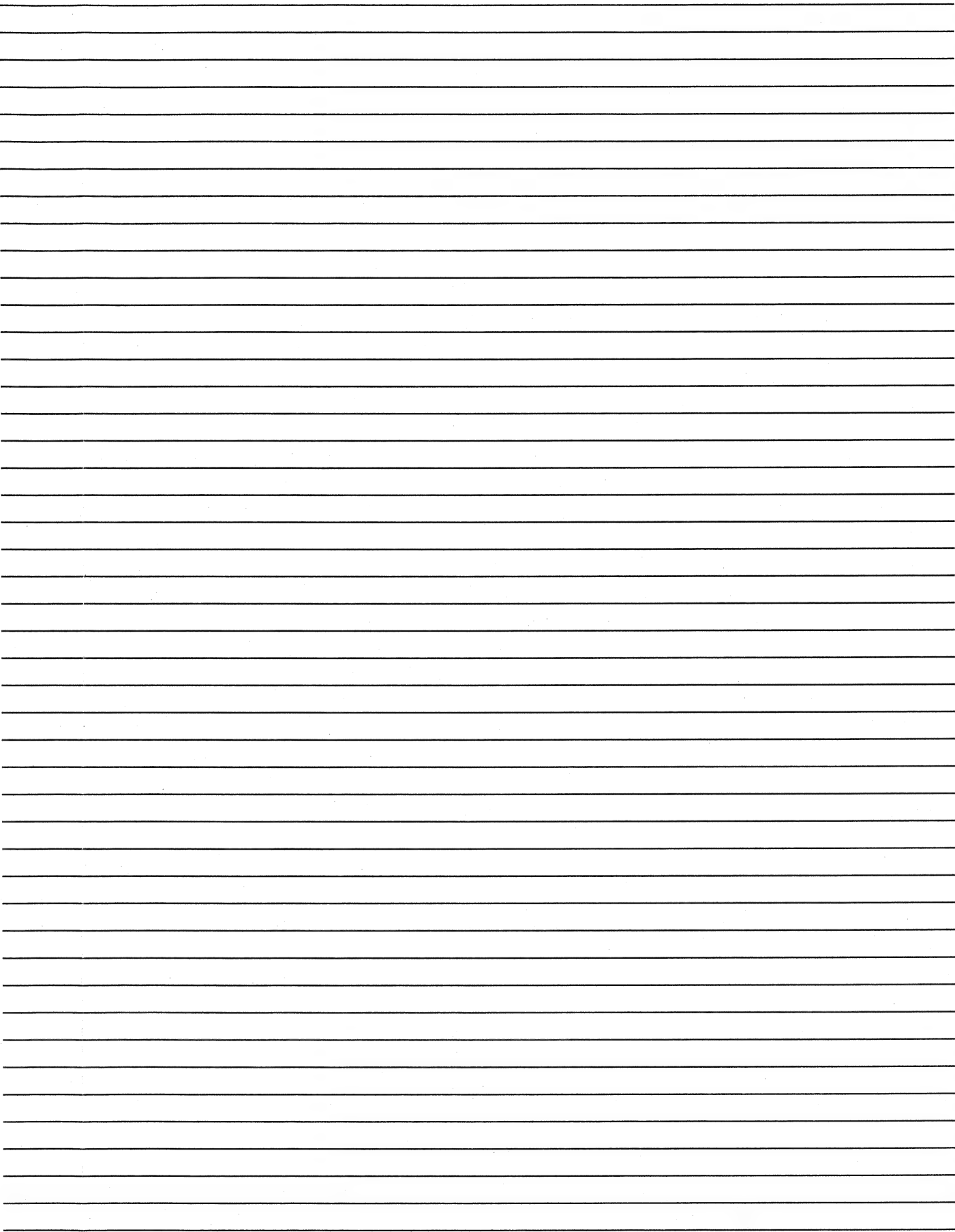


wiring.cdr  
CL 261000

Oscillograms



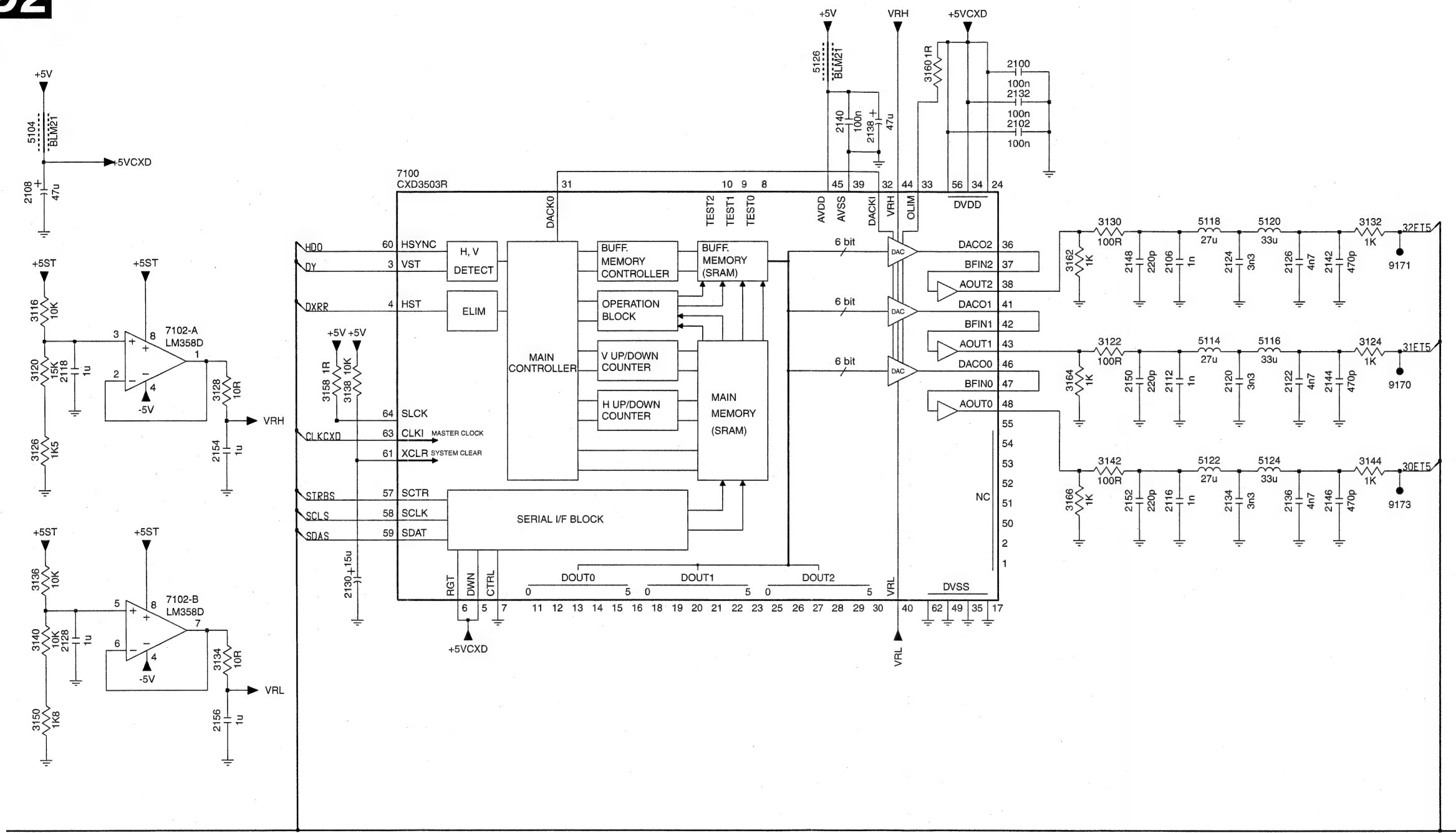
OSC\_1.CDR  
261000



## LC4242/4246 6-1



D2



- 2100 A8
- 2102 B8
- 2106 C9
- 2108 B1
- 2112 D9
- 2116 D9
- 2118 D1
- 2120 D9
- 2122 D10
- 2124 C9
- 2126 C10
- 2128 E1
- 2130 E3
- 2132 B8
- 2134 D9
- 2136 D10
- 2138 B7
- 2140 B6
- 2142 C10
- 2144 D10
- 2146 D10
- 2148 C9
- 2150 D9
- 2152 D9
- 2154 D2
- 2156 F2
- 3116 C1
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- 3122 C8
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- 3130 B8
- 3132 B10
- 3134 F2
- 3136 E1
- 3138 D3
- 3140 E1
- 3142 D8
- 3144 D10
- 3146 B7
- 3150 F1
- 3152 D3
- 3154 E3
- 3156 E3
- 3158 D3
- 3160 A7
- 3162 C8
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- 9173 E10

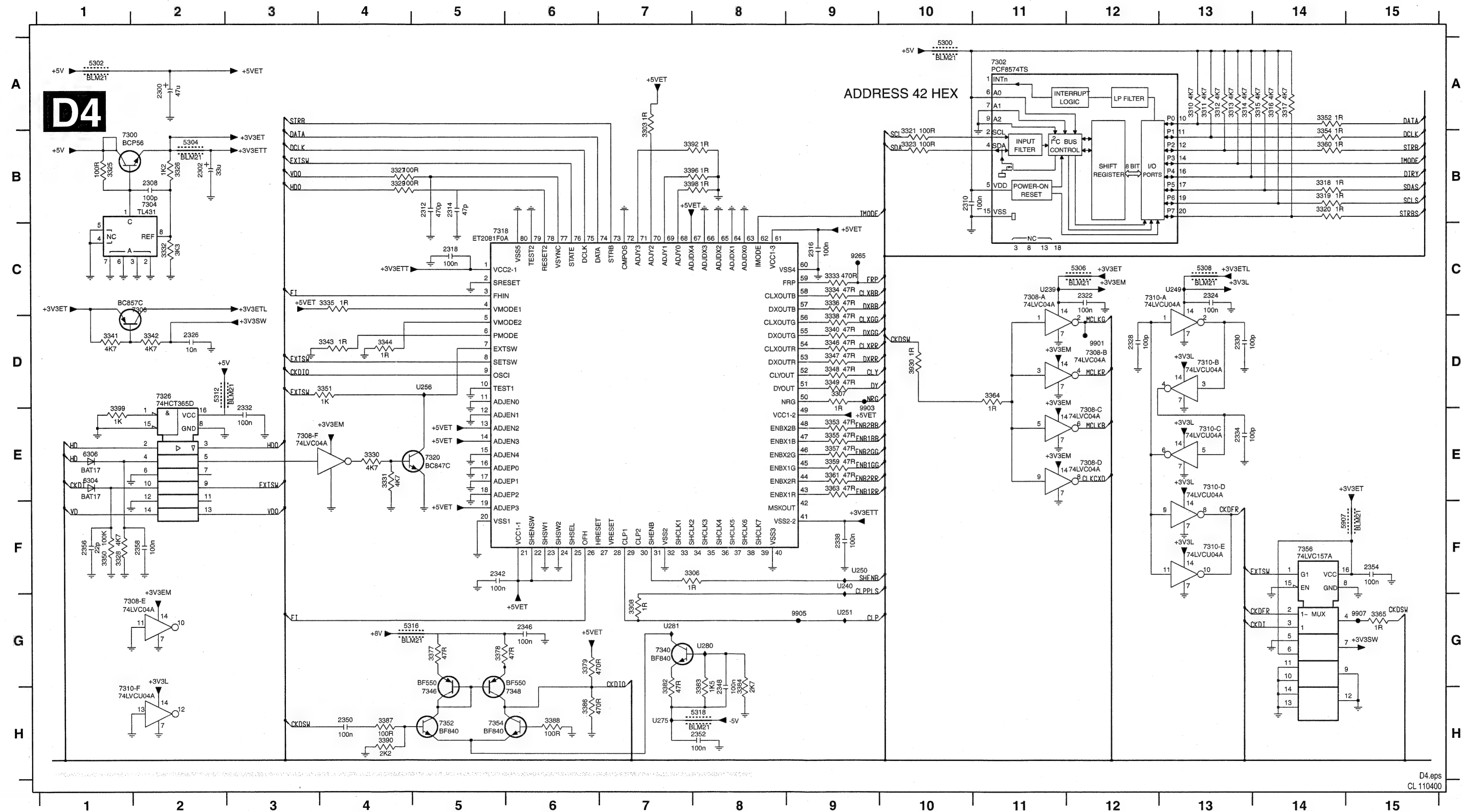
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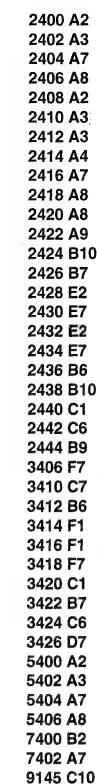




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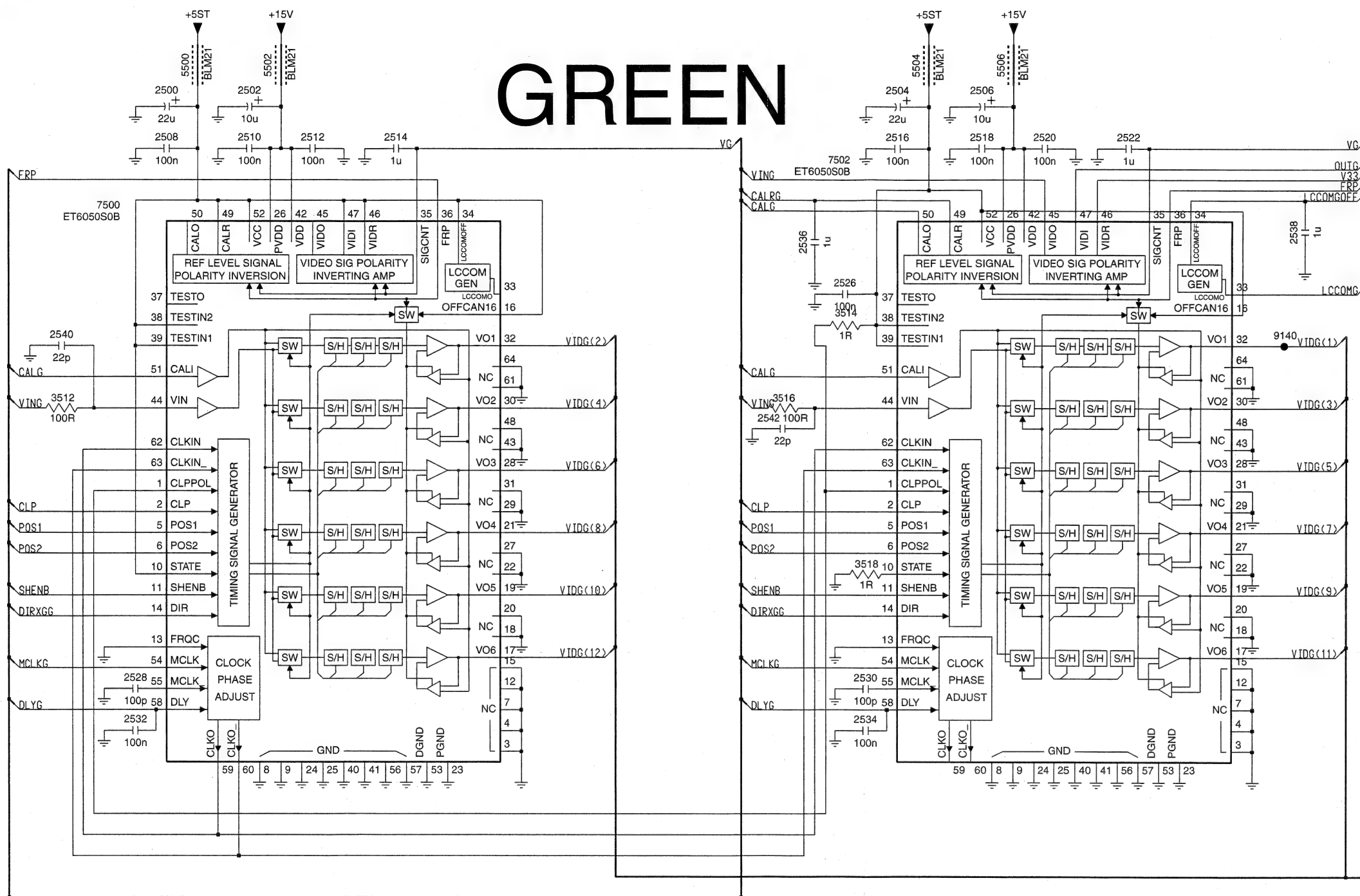
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D6

GREEN

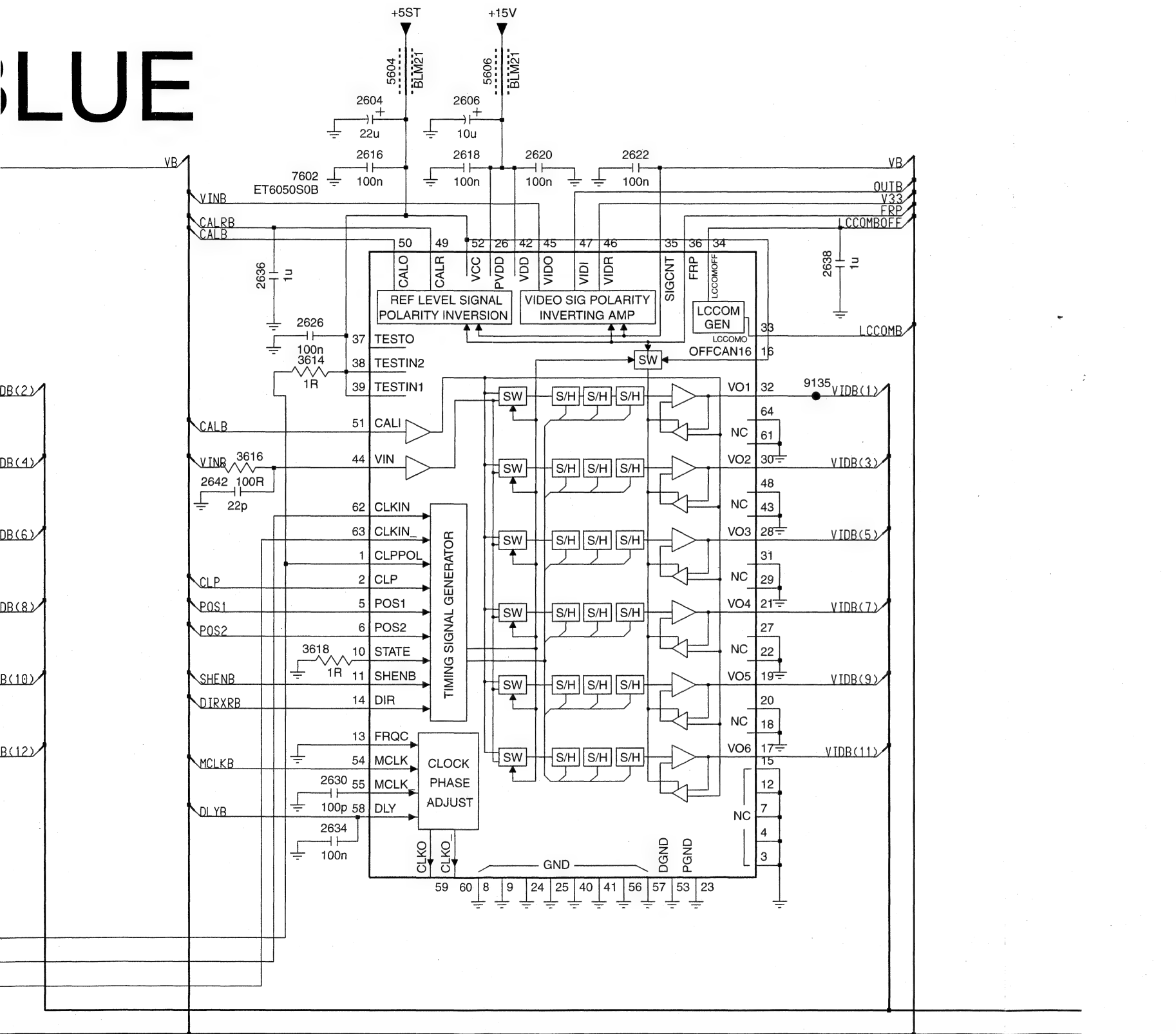


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- 3504 F1
- 3506 F7
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- 3510 C7
- 3512 C1
- 3514 C7
- 3516 C6
- 3518 D7
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- 5506 A8
- 7500 B2
- 7502 A7
- 9140 C10

# BLUE



BLUE



A

B

C

D

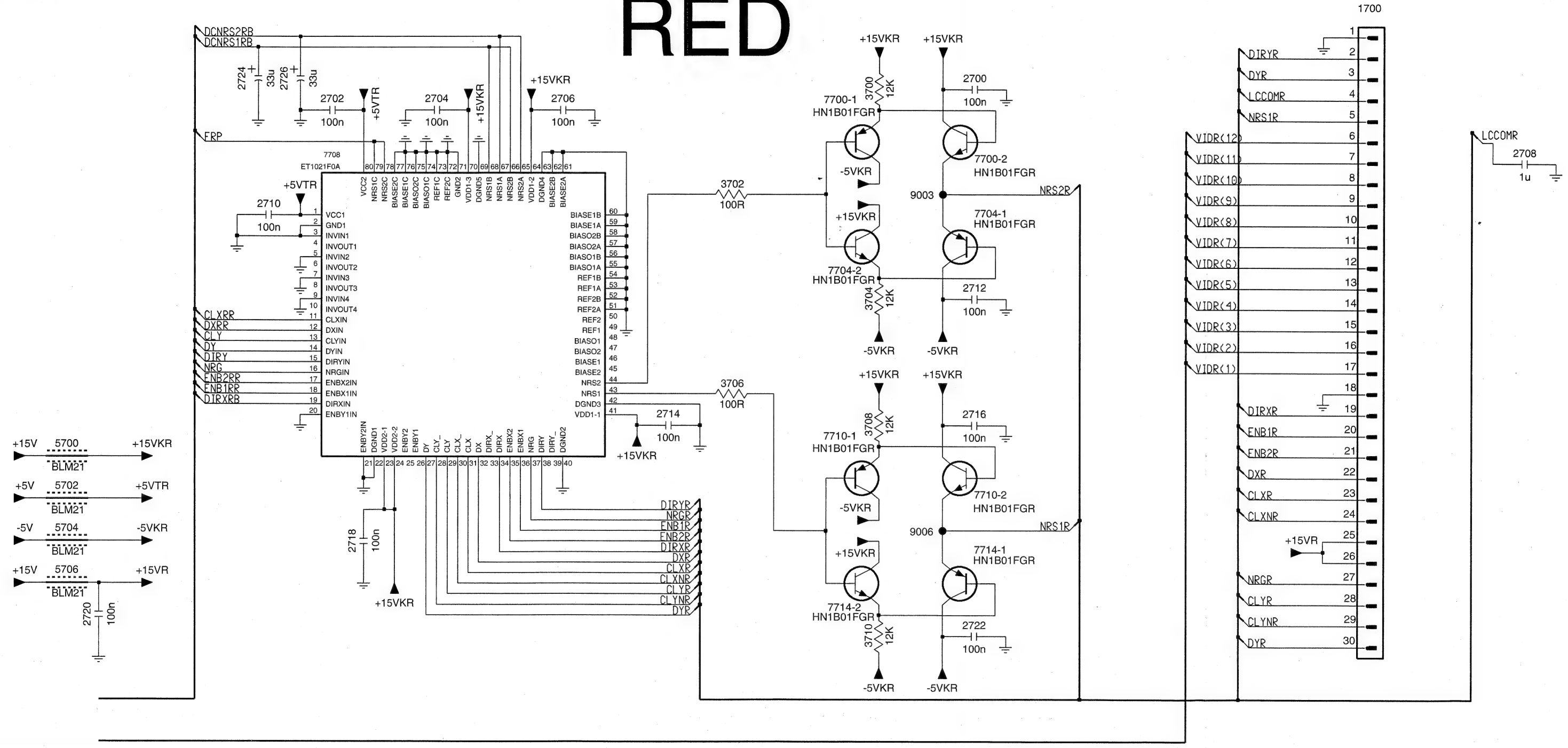
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F

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- 2638 B10
- 2640 C1
- 2642 C6
- 2644 B9
- 3600 C6
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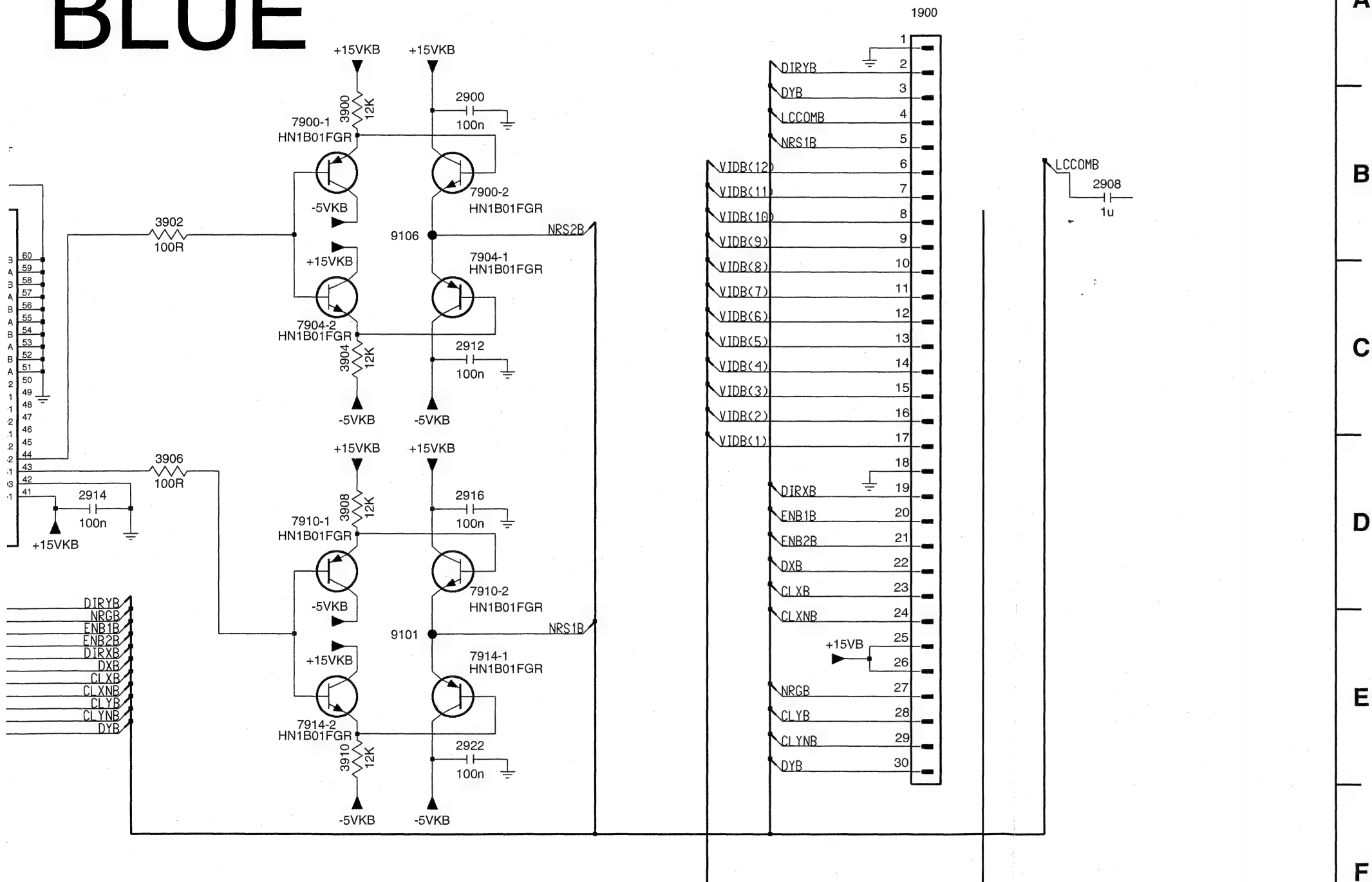
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RED



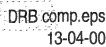


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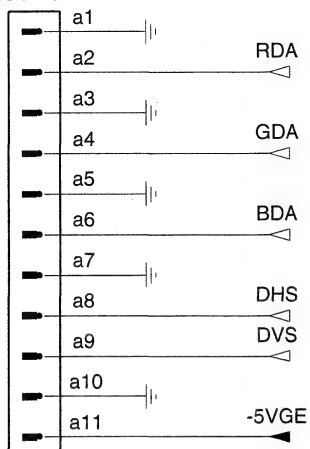
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- 3902 B6
- 3904 C7
- 3906 D6
- 3908 D7
- 3910 E7
- 5900 D1
- 5902 D1
- 5904 E1
- 5906 E1
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- 7900-2 B8
- 7904-1 B8
- 7904-2 C7
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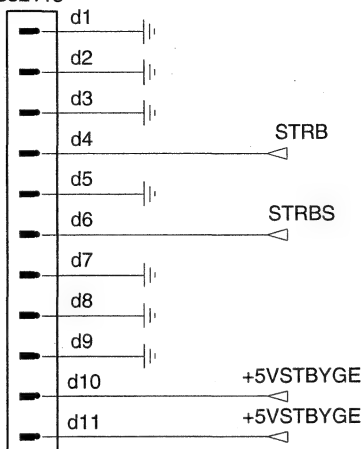
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1446-3 D5  
1446-4 A6  
1446-5 C6  
1446-6 D6

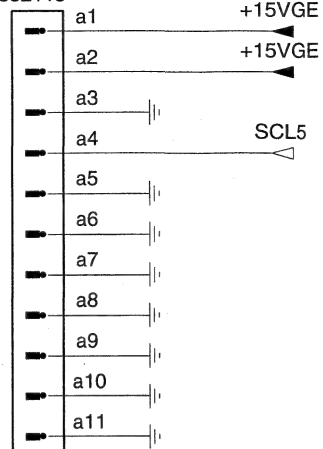
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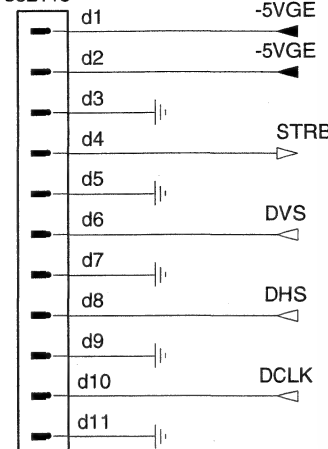
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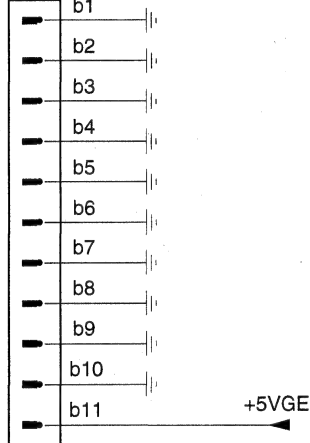
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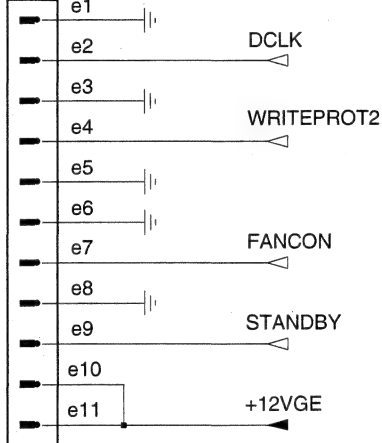
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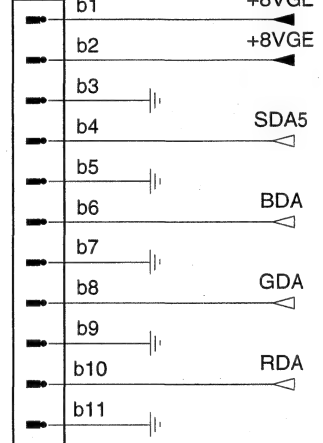
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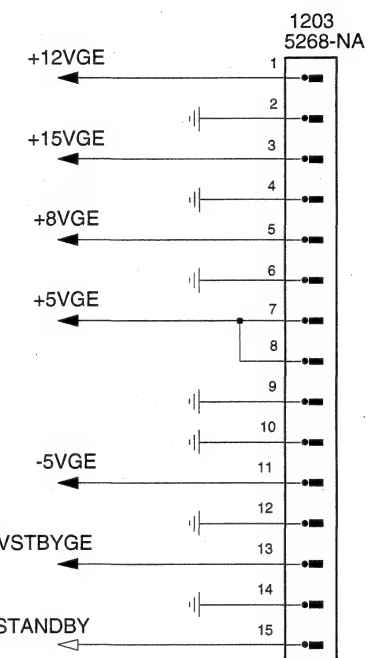
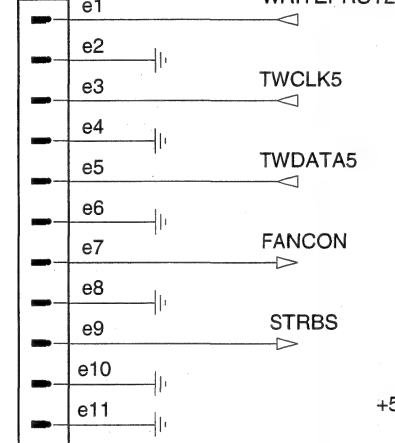
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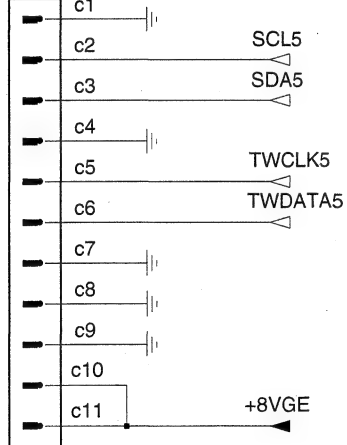
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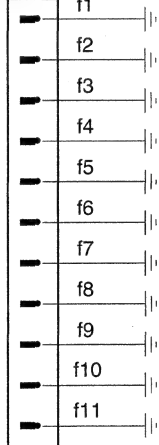
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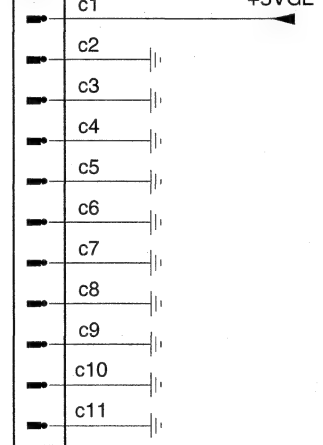
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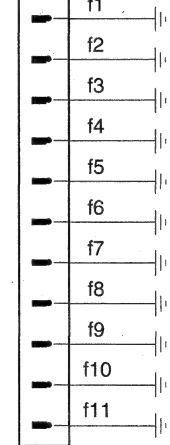
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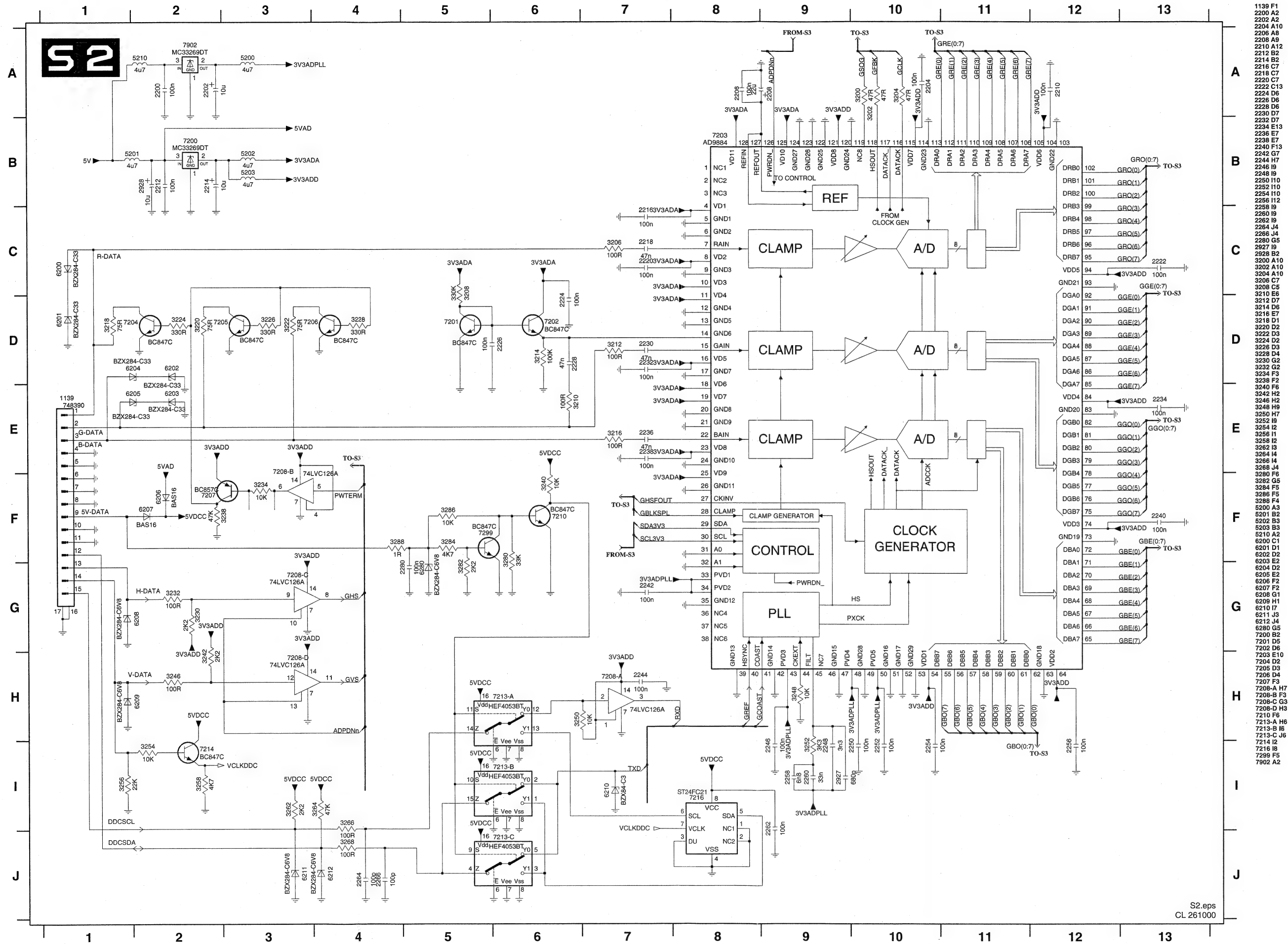
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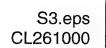




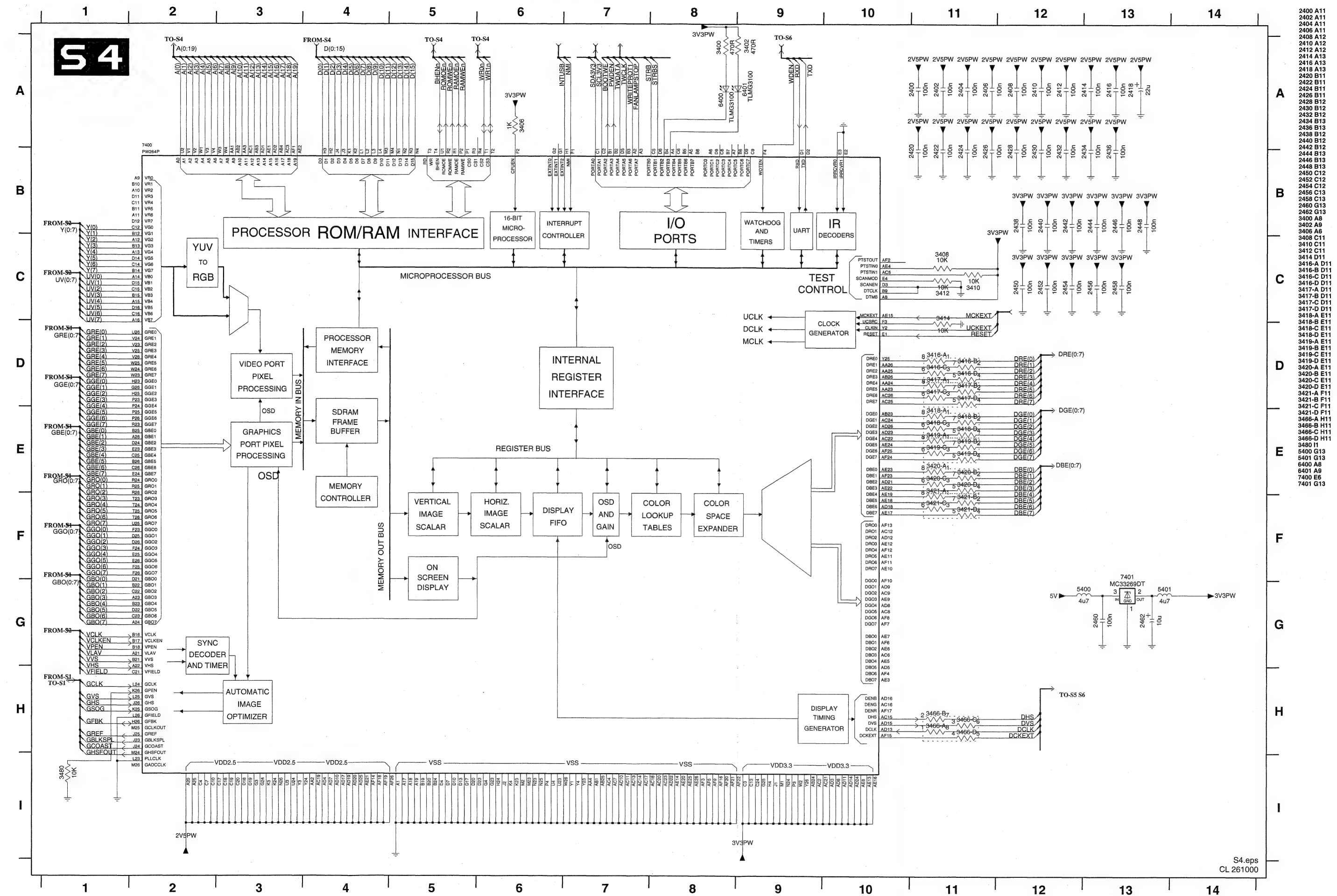


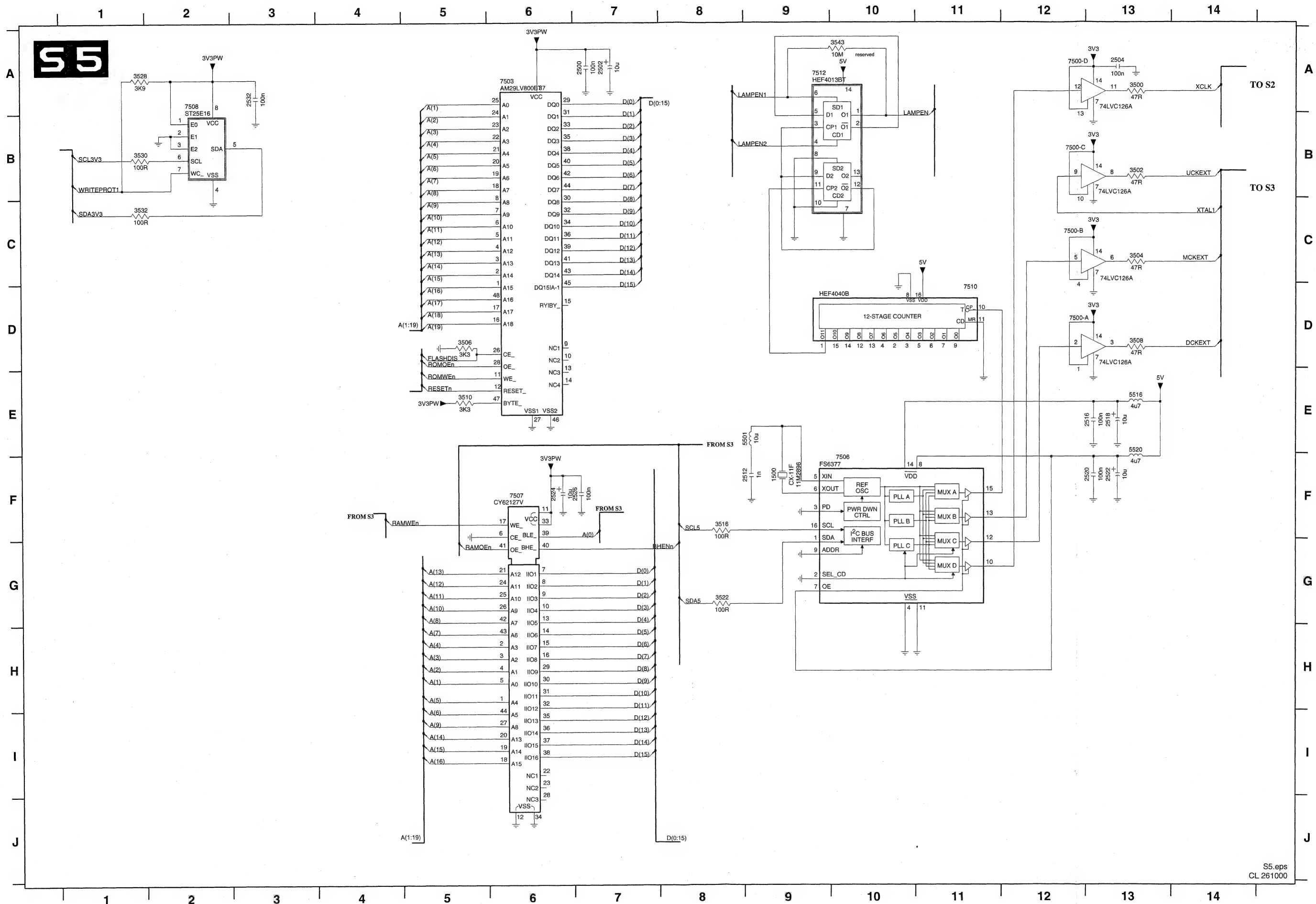
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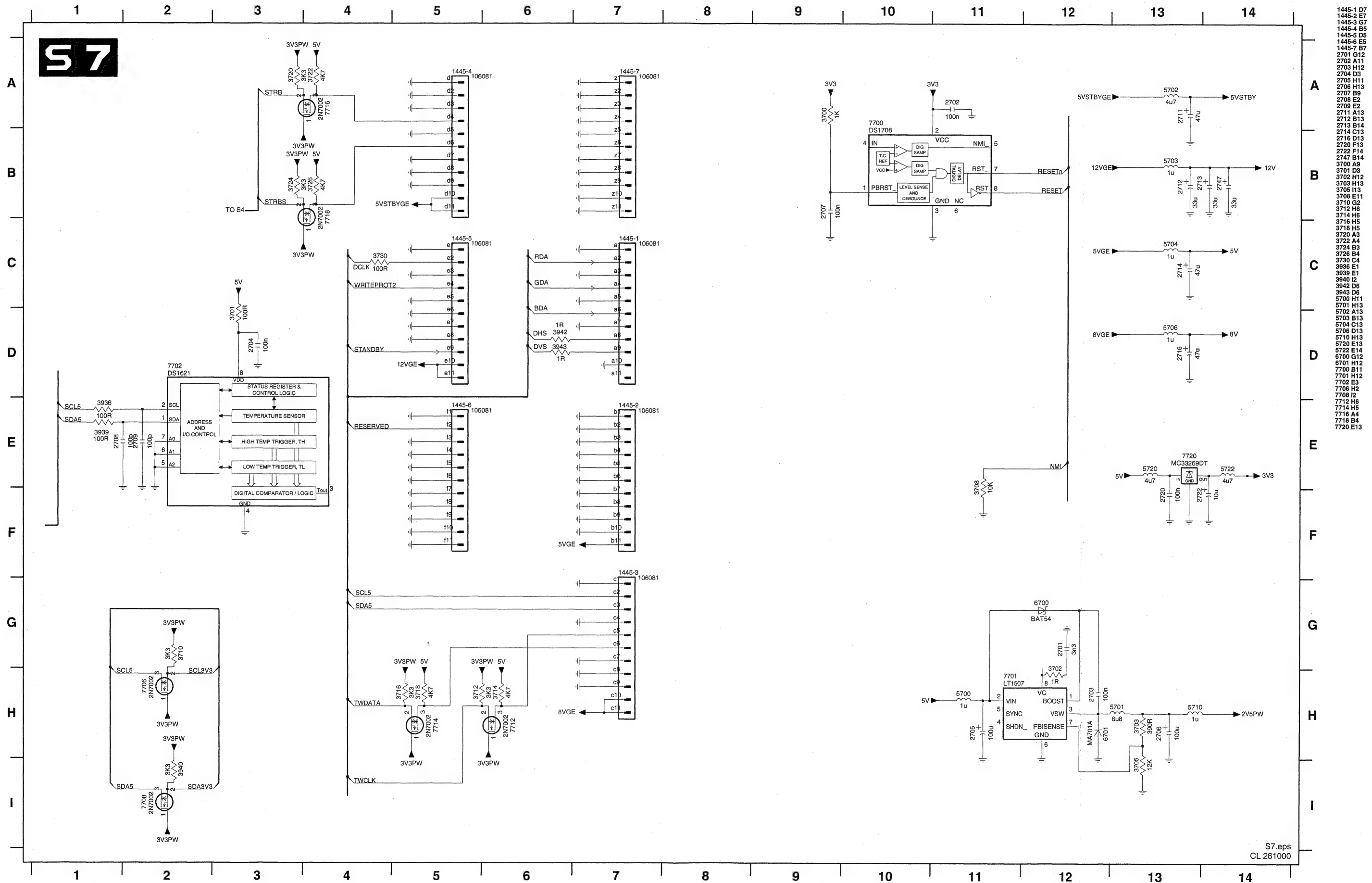


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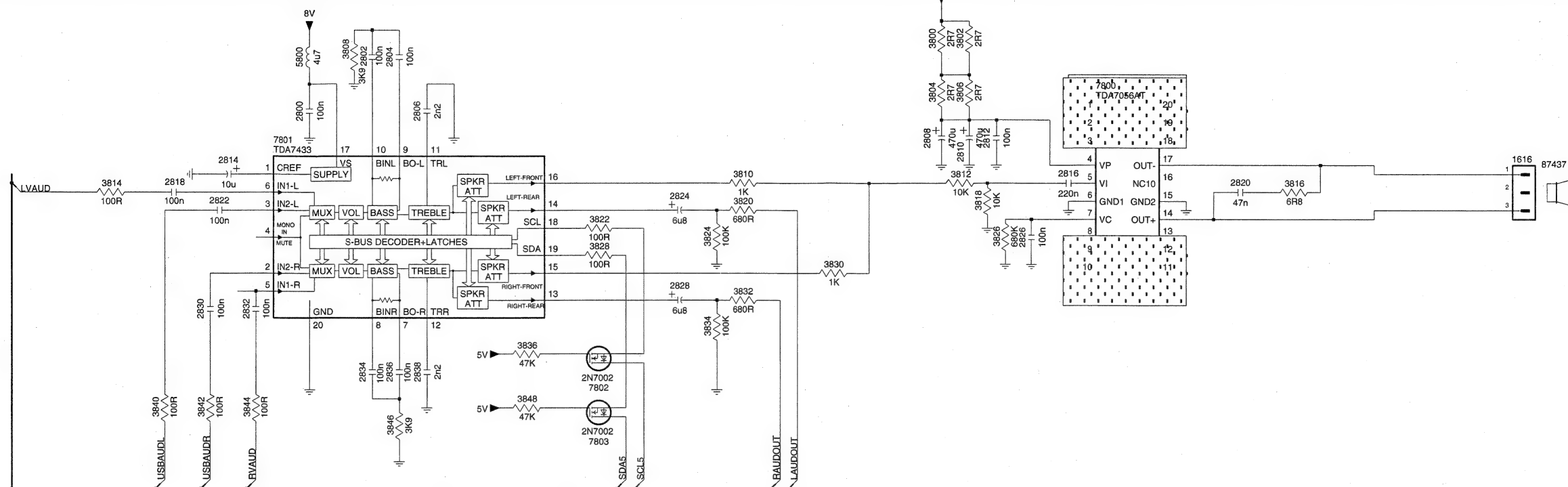
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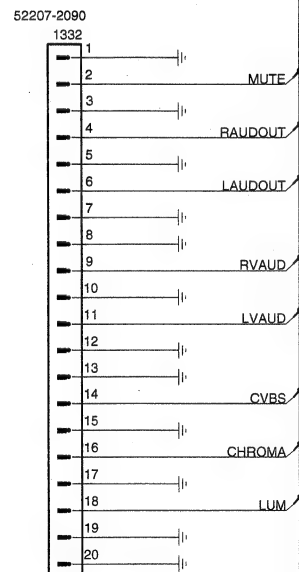


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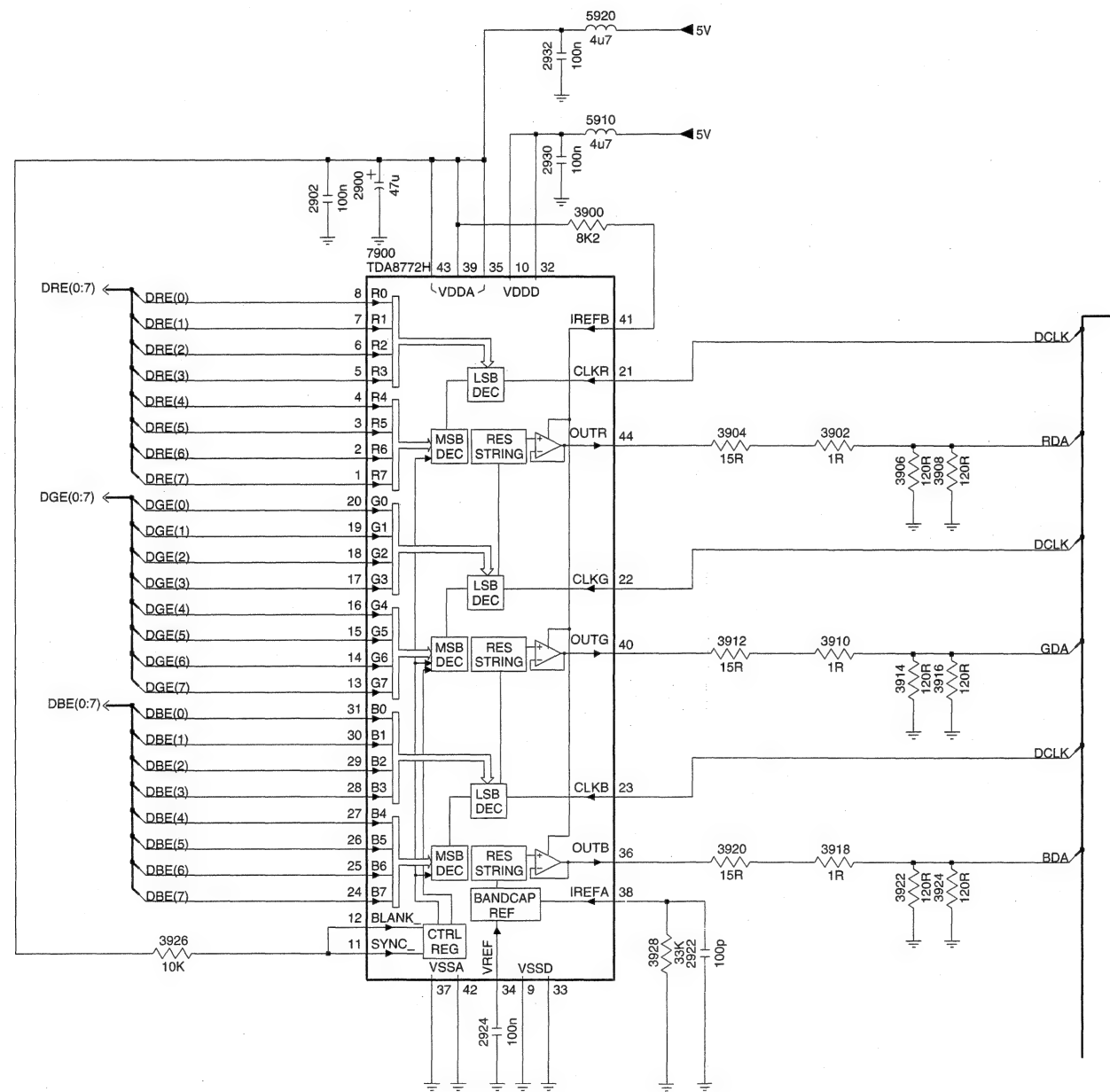


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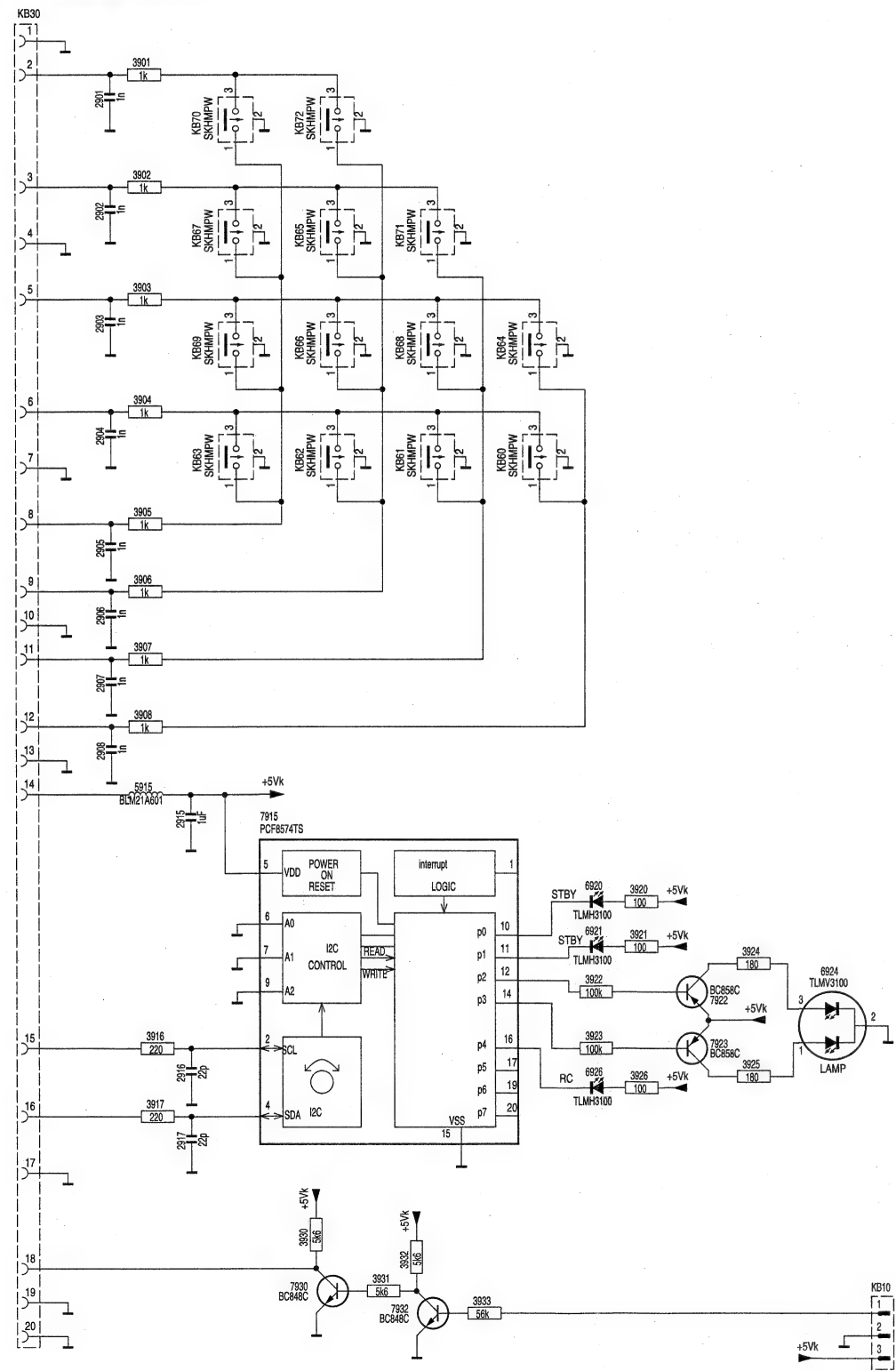
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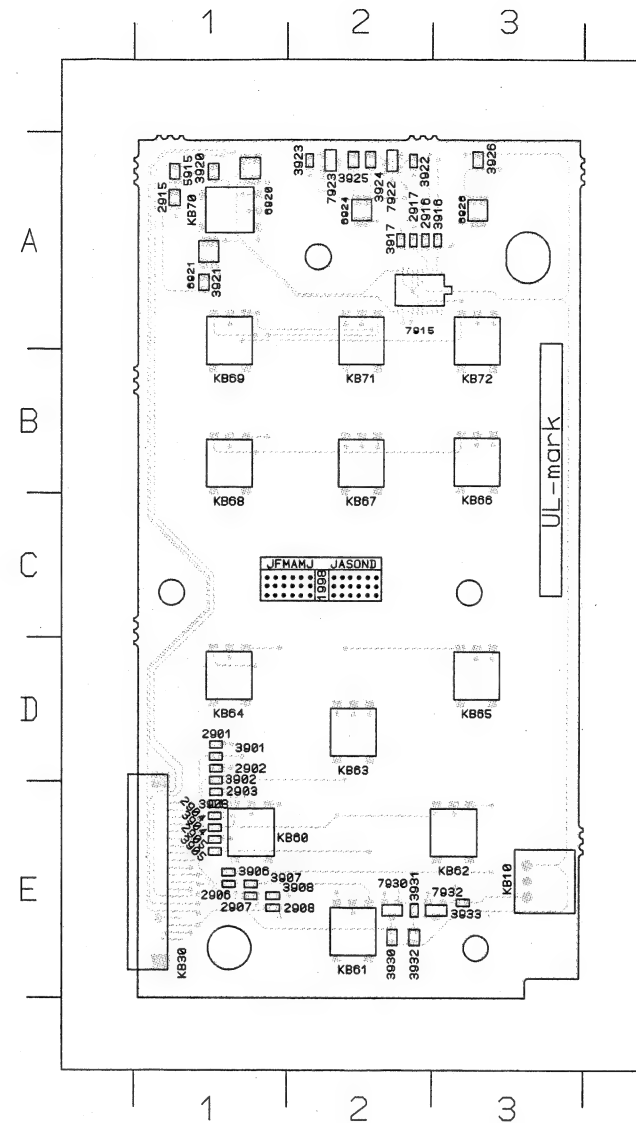


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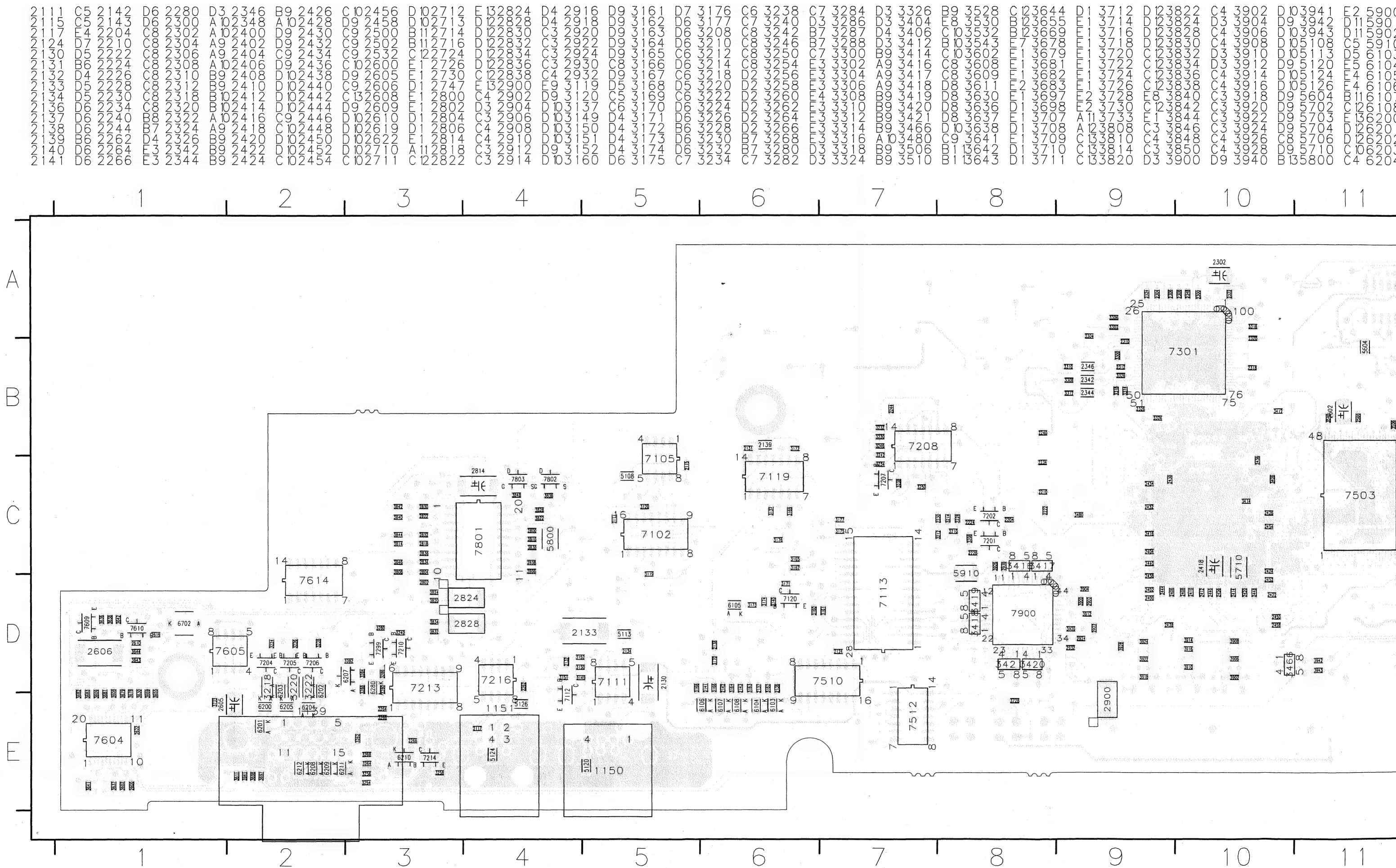


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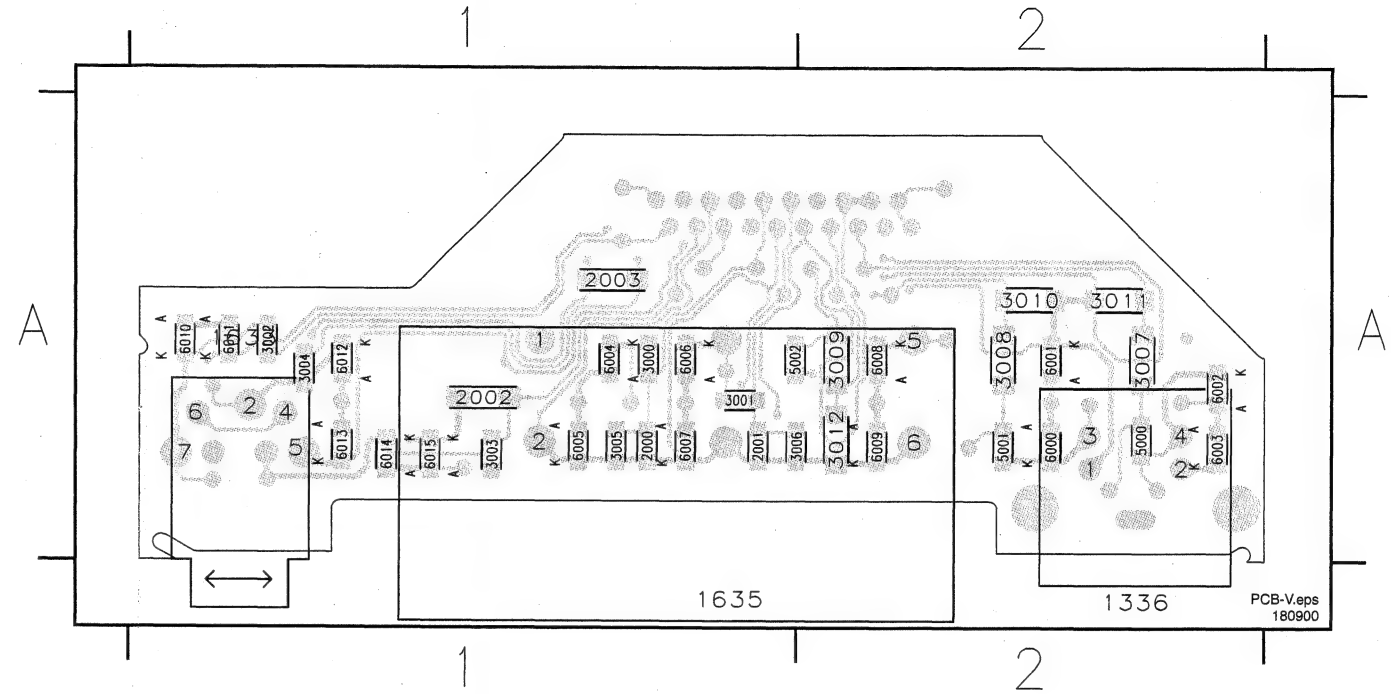
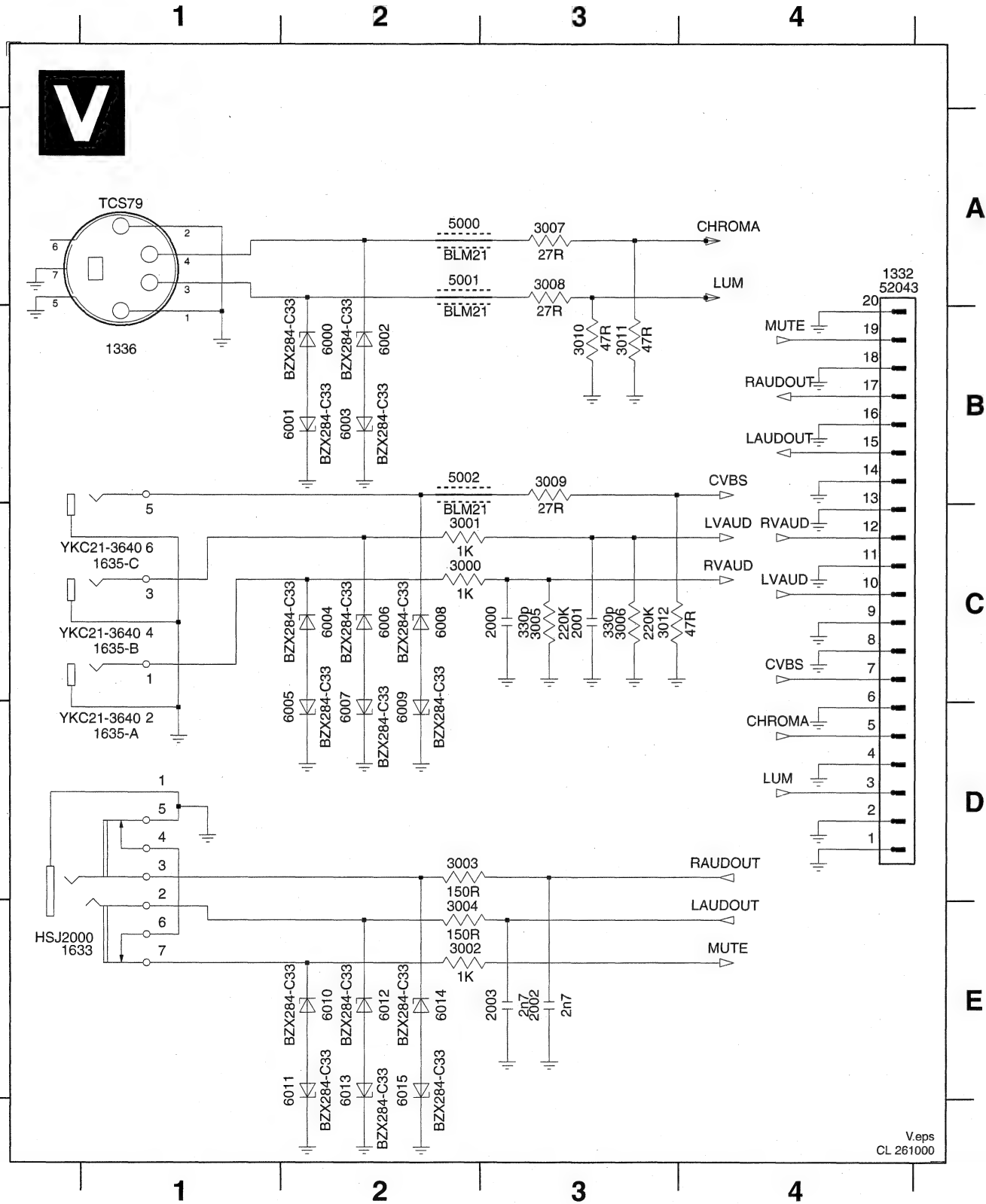






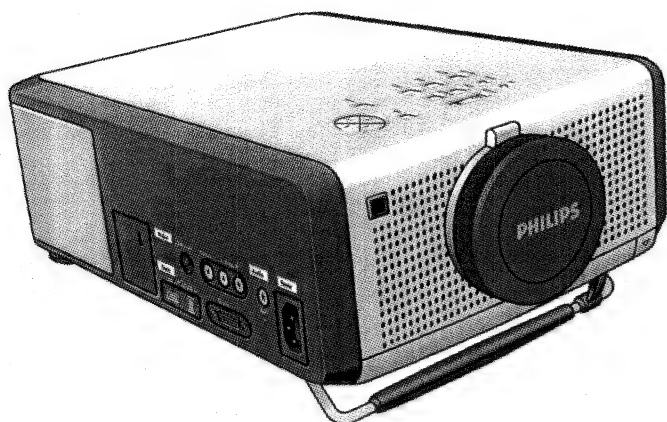
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# Philips Multimedia projector LC4246, LC4242, LC4236



## User guide English

Windows 98/NT/2000 compatible



### 0. Controls and connections

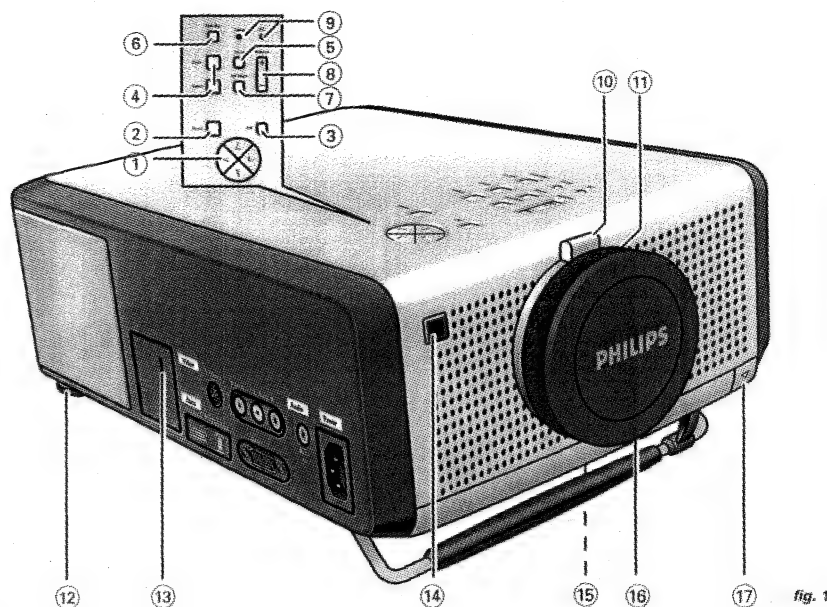


fig. 1

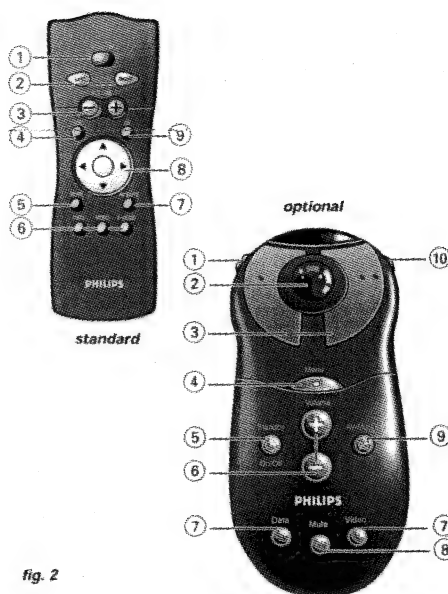


fig. 2

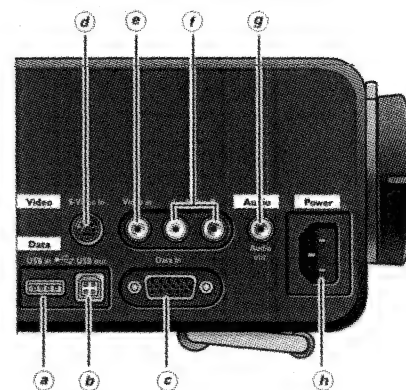


fig. 3

### 1. Introduction

#### Table of contents

0. Controls and connections.....	2
1. Introduction.....	3
Table of contents.....	3
Introduction.....	3
Packaging contents.....	3
2. Things You Should Know.....	3
3. Important Safeguards.....	4
4. Projector Features.....	5
5. Functional Overview.....	6-7
Controls.....	6
Connections.....	7
6. Set Up.....	8-9
Positioning the projector and screen.....	8
Mains supply.....	8
Adjusting the focus and size of the image.....	8
Adjusting the vertical and horizontal angle of the projector.....	8
Moving the projector.....	9
Inserting the batteries in the trackball remote control.....	9
7. Installation.....	10-14
Video/computer cables and adapter.....	10
Connecting to a computer.....	11
Connecting to video equipment.....	12
Connecting to audio equipment.....	13
Connecting to an external monitor.....	14
8. Operation.....	15-19
Preparation.....	15-16
Display and Picture control.....	16-18
Audio control.....	18
Other settings.....	19
9. Maintenance.....	20-22
Cleaning.....	20
Cleaning the dustfilter.....	20
Maintenance of your remote control.....	20
Lamp.....	21
Lamp replacement.....	21
Resetting the lamp life time.....	22
10. Troubleshooting.....	23

#### Introduction

Congratulations on your purchase of one of the most sophisticated and reliable products on the market today. We are sure that, used properly, it will bring you years of enjoyment. You will want to keep this manual handy, as it is a convenient source of information about your projector. For your own protection and prolonged operation of your projector, please read the 'Important Safeguards' section before use.

#### Packaging contents

Please confirm that the following items are packed in the projector box. They are provided to help you use or set up your projector.

- Projector
- Mains lead
- VGA Cable
- Audio/Video RCA Cable
- USB cable
- Scart/RCA Audio Video adapter (depending on region)
- Remote control + batteries
- Soft bag
- CD-ROM & Quick Reference Guide

### 2. Things You Should Know

**Note:** This equipment has been tested to comply with the limits for a class A digital device in accordance with Part 15 of the FCC Rules as well as the European CE marking.

Operation is subject to the following two conditions:  
1. This device may not cause harmful interference, and  
2. This device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user's guide, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:  
- Reorientate or relocate the receiving antenna.  
- Increase the distance between the equipment and receiver.  
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.  
- Consult the dealer or an experienced radio/TV technician for help.

#### FCC Warning:

To assure continued compliance, use only the provided grounded power supply cord and shielded interface cables when connecting this device to a computer. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

**Note:** Save energy! Please put the projector in the STANDBY position if you are not going to use the projector for more than 15 minutes.

#### Important note for users in the U.S.A.

The responsible party of this multi media projector is the following:

Philips Consumer Electronics Company  
One Philips Drive  
Knoxville, TN 37914  
Telephone (1888) 873-4672

### 3. Important Safeguards



**CAUTION:** Please read all of these instructions before you operate your projector.

Save these instructions for future reference.

Electrical energy can perform many useful functions.

This projector has been engineered and manufactured to meet applicable safety standards. IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARDS. In order not to defeat the safeguards incorporated into this projector, observe the following basic rules for its installation, use and servicing.

1. Unplug the projector from the wall outlet before cleaning or lamp replacement.
2. Do not use liquid cleaners or aerosol cleaners. Use a soft dry cloth to clean the projector unit. If the unit is very dirty, wet a cloth with neutral detergent, squeeze it tight, wipe the unit with it, and finish by wiping with a dry cloth. Do not use a chemical duster or polisher-cleaner because it can adversely affect the unit and peel the paint.
3. Do not use attachments not recommended by PHILIPS, as they may cause hazards.
4. Do not use the projector near water: for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, etc. Never spill liquid into the projector.
5. Do not place the projector on an unstable cart, stand, or table. The projector may fall, which may cause serious injury to a child or an adult and/or serious damage to the unit. Use only with a cart or stand recommended by its manufacturer as being suitable for use with a projector.
6. Ceiling, wall or shelf mounting should be done with a mounting kit approved by the manufacturer for use with a projector and should follow the manufacturer's instructions.
7. Projector equipment and cart combinations should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.
8. Slots and openings in the sides and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the projector and to protect it from overheating, these openings must not be blocked or covered. These openings should never be covered with cloth or other material. The bottom opening should not be blocked by placing the projector on a bed, sofa, rug, or other similar surface. The projector should not be placed near or over a radiator or heating vent. The projector should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
9. The projector should be operated only from the type of power source indicated on the side of the projector or in the specifications and with the appropriate mains lead. If you are not sure of the type of power supplied to your business or the right type of mains lead, consult your projector dealer or local power company.
10. Do not allow anything to rest on the power cord. Do not place the projector where the cord will be walked on.
11. Follow all warnings and instructions marked on the projector.

12. As a safety feature, this projector is equipped with mains lead with a 3-pin grounded plug (for USA-versions only) or a 2-pin grounded plug (for European versions only). The 3-pin/2-pin grounded plug will fit only into a grounding type power outlet. If the plug does not fit, use an adapter that is properly grounded or have an electrician install a grounded type outlet. Do not attempt to modify this AC plug.

13. For added protection of the projector during a lightning storm, or when it is left unattended or not in use for long periods of time, unplug it from the wall outlet and disconnect any cable systems. This will prevent damage to the projector due to lightning and power-line surges.

14. Do not overload wall outlets and extension cords with too many products, because this can cause a fire or electric shock.

15. Never push objects of any kind into the projector through cabinet slots as they may touch dangerous voltage points or short cut parts, which could result in a fire or electric shock.

16. Do not attempt to service the projector yourself other than maintenance issues presented in chapter 'Maintenance'. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

17. Unplug the projector from the wall outlet and refer servicing to qualified service personnel under the following conditions:  
A. When the power cord or plug is damaged or frayed.  
B. If liquid has been spilled into the projector.  
C. If the projector has been exposed to rain or water.  
D. If the projector does not operate normally when you follow the operating instructions. Adjust only those controls that are covered by the operating instructions; improper adjustment of other controls may cause damage and will often require extensive work by a qualified technician to restore the projector to normal operation.  
E. If the projector has been dropped or the cabinet has been damaged.  
F. When the projector exhibits a distinct change in performance - (this indicates a need for service).

18. Upon completion of any service or repairs to the projector, ask the service technician to perform a routine safety check to check that the projector is in safe operating condition.

19. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.

20. It is recommended to clean the air filter after every 100 lamp hours. The projector may become too hot if the filter is not cleaned when required.

21. If the lens becomes dirty or smudged, clean it with a clean, dampened cloth. Never touch the lens with your fingers.

22. Do not look directly into the aperture and lens while operating the projector as this may damage your eyes.

4. Projector Features

1. **Fully compatible with PC and MAC**  
The projector will adapt automatically to the proper data source. The 'auto image' feature automatically sizes and positions the image to fit optimally in the screen picture.
2. **High reliability and excellent brightness**  
The Philips UHP lamp guarantees long life, excellent brightness over the lamp's lifetime and excellent colour reproduction. Furthermore, the projector has an excellent uniformity of brightness over the whole screen.
3. **Excellent video quality**  
The projector accepts the input signal of all major video formats, including PAL, SECAM, NTSC and the higher quality S-Video signals. The projector will recognize these standards and adapt to them automatically. With the 'picture format' feature you can select one of three picture format options 4:3, 16:9 or 16:9 enlarged.
4. **Very easy to install and operate**  
The **USB** (Universal Serial Bus) connectors allow you to connect to computers and PC peripherals equipped with USB interface.
- USB out (upstream)** for connecting a PC or MAC computer equipped with a USB interface (down stream) for ease of operation, resulting in real hot plug and play operation.
- USB in (downstream)** for connecting USB peripherals (like speakers, a mouse, a document video camera, a keyboard, a wireless connection box, a printer etc.) for ease of use, resulting in real hot plug and play operation.
- The **OSD** (On Screen Display) information screens and menus in 6 languages provide you with additional information to help you make the right choices about installation and operation, and to perform the correct actions. The standard OSD language is English. In addition you can select French, Spanish, German, Italian and Portuguese.
- The sensor of the wireless remote control allows you to operate both your computer as well as your projector from almost anywhere in the room. The **directional shuttle** on the projector and on the **compact remote control** function as **Cursor Control** and are used to manipulate the mouse cursor on the connected computer, as long as the menu is not active. On the optional **trackball remote control** the **trackball** is used to manipulate the mouse cursor. When the menu is active the **Cursor Control** controls the menu cursor.

- The remote control and local keyboard provide direct access buttons for those functions that are most often used during presentations:
- Source selection buttons**  
With the VIDEO and DATA buttons you can directly select the required source: S-video, Video or Data.
- Standby/On/Off**  
Switches the projector in the Power Standby mode.
- Mute**  
Mutes the sound of the projector (or an externally connected sound amplifier).
- A/V (Audio/Video) Mute**  
Blanks out the screen and mutes the sound of the projector (or an externally connected sound amplifier).
- VOLUME +**  
For adjusting the volume.
5. **Stereo Audio Output**  
Line output for connecting external audio equipment via standard 3.5 mm stereo jack.
6. **Adjustable Screen Capability**  
The diagonal picture size of the display can be set from 21" (0.53 m) to 262" (6.6 m).
7. **Ceiling Mount and Rear Screen projection**  
The projector is equipped with a full mirror scan conversion function ('vertical/horizontal mirror'), which allows the image to be reversed for ceiling mount as well as for rear projection applications.
8. **External monitor connection**  
A separate external monitor (or a second projector) can be connected to the projector, using an optional VGA Y-cable. The image projected is simultaneously shown on the monitor.
9. **Digital Keystone Correction**  
A keystemed image (picture top width larger than picture bottom width or vice versa) appears when the relative positions of the projector and the screen are not correct. With the 'vertical keystone correction' feature you can correct this picture distortion. Vertical keystone correction is accessible in the 'Display' submenu of the OSD menu.
10. **Digital features**  
The digital features of the projector are of great value for an attractive presentation. With 'digital zoom' a specific part of the projected image can be enlarged. The 'digital freeze' feature enables you to capture moving pictures (still picture).

5. Functional Overview

See illustrations

Controls (fig. 1)

On projector

- ① **Cursor Control**  
For manipulating the mouse cursor on the connected computer as long as the menu is not active. When the menu is active the **Cursor Control** controls the menu cursor. The cursor control, by means of the local keyboard, works with up/down and left/right button operation.
- Notes:** ~ The **Cursor Control** only functions when the **USB out (upstream)** socket of the projector is connected to the **USB downstream terminal** of the computer (Data 1 and Data 2).
- ② **MENU**  
For activating and deactivating the menu.
- ③ **OK**  
For action confirmation in the menu when the menu is on screen. When the menu is not on screen the - / - buttons on the trackball remote control function as the Left and Right mouse buttons of your PC.
- ④ **Source selection buttons**  
**VIDEO** - For selecting the video signal or S-video signal as the current projection source.  
The button toggles between video and S-video signal.  
**DATA** - For selecting the DATA signal as the current projection source.
- ⑤ **MUTE**  
For muting the sound of the projector (or an externally connected sound amplifier).
- ⑥ **Standby/On/Off**  
For switching the projector in the power standby mode.
- ⑦ **A(audio)/V(video)-MUTE**  
For muting the sound of the projector (or an externally connected sound amplifier) and for muting the picture.
- ⑧ **- VOLUME +**  
For adjusting the volume.
- ⑨ **Indicators**  
**Lamp indicator**  
- Flashes green when the lamp is starting up.  
- Lights up green when the lamp is on.  
- Flashes orange when the remaining lamp life is less than 100 hours.  
- Lights up orange when the lamp life is expired.  
- Lights up red when  
• the temperature, measured in the set, is too high, or  
• lamp start has failed.
- Remote Control indicator**  
Flashes green when the remote control is operated and the projector responds to this operation.
- ⑩ **ZOOM ring**  
For adjusting the size of the projected image.
- ⑪ **FOCUS ring**  
For adjusting the focus of the projected image.

- ⑫ **Horizontal adjusters**  
For adjusting or correcting a possible oblique displayed picture.
- ⑬ **Lock slit**  
For inserting an optional locking device (Kensington lock).
- ⑭ **IR sensor**  
Receive the signals from the remote control.
- ⑮ **Dust filter**
- ⑯ **Lens cap**
- ⑰ **HEIGHT/LEVEL adjuster**  
For adjusting the vertical angle of the projector.

On compact remote control (fig. 2)

- ① **Standby**  
For switching the projector in the power standby mode.
- ② **Left/Right**  
Function as the Left and Right mouse buttons of your PC.
- ③ **- VOLUME +**  
For adjusting the volume.
- ④ **MENU**  
For activating and de-activating the menu.
- ⑤ **MUTE**  
For muting the sound of the projector (or an externally connected sound amplifier).
- ⑥ **Source selection buttons**  
**DATA** - for selecting the DATA signal as the current projection source.  
**VIDEO** - for selecting the video signal as the current projection source.  
**S-VIDEO** - for selecting the S-video signal as the current projection source.
- ⑦ **A(audio)/V(video)-MUTE**  
For muting the sound of the projector (or an externally connected sound amplifier) and for muting the picture.
- ⑧ **Cursor Control**  
For manipulating the menu cursor when the menu is active.
- ⑨ **OK**  
For action confirmation in the menu when the menu is on screen.

5. Functional Overview

See illustrations

On trackball remote control - optional (fig. 2)

- ① **On/off button**  
For switching the remote control on and off.  
**Note:** ~ The remote control will always use some power, even when not in use. Therefore always switch off the remote control after use.
- ② **Cursor Control**  
For manipulating the mouse cursor on the connected computer as long as the menu is not active. When the menu is active the **Cursor Control** controls the menu cursor.
- ③ **OK**  
For action confirmation in the menu when the menu is on screen. When the menu is not on screen the - / - buttons function as the Left and Right mouse buttons of your PC.
- ④ **MENU**  
For activating and deactivating the menu.
- ⑤ **Standby/On/Off**  
For switching the projector in the power standby mode.
- ⑥ **- VOLUME +**  
For adjusting the volume.
- ⑦ **Source selection buttons**  
**VIDEO** - For selecting the video signal or S-video signal as the current projection source.  
The button toggles between video and S-video signal.  
**DATA** - For selecting the DATA signal as the current projection source.
- ⑧ **MUTE**  
For muting the sound of the projector (or an externally connected sound amplifier).
- ⑨ **A(audio)/V(video)-MUTE**  
For muting the sound of the projector (or an externally connected sound amplifier) and for muting the picture.
- ⑩ **Light button**  
For switching on the button illumination.  
The back-light will switch off automatically after 5 seconds.

Connections (fig. 3)

Data source connections

- a **USB in** (downstream)  
Socket for connecting USB peripherals like a document video camera, a mouse, a keyboard, a wireless connection box, a printer etc.
- b **USB out** (upstream)  
Socket for connecting a PC or an Apple Macintosh computer equipped with a USB downlink connection.
- c **DATA IN**  
Input socket for connecting to the Data out terminal of a computer.
- g **AUDIO OUT** (audio output connection)  
Output socket for connecting to the Line Input sockets of an amplifier or stereo system.

Video source connections

- d **S-VIDEO IN**  
Input socket for connecting to the S-VIDEO OUT socket of a S-VHS video recorder, a VCR, Laser Disc player, video camera or TV with AV output socket.
- e **VIDEO IN**  
Input socket for connecting to the VIDEO OUT socket of a video recorder, Laser Disc player, video camera or TV with AV output socket (PAL, NTSC, SECAM).
- f **AUDIO IN L/R**  
Input sockets for connection to the Audio OUT sockets of a video recorder (S-VHS, PAL, NTSC, SECAM).
- g **AUDIO OUT** (audio output connection)  
Output socket for connecting to the Line Input sockets of an amplifier or stereo system.

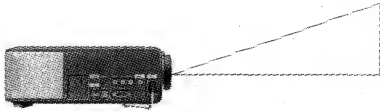
Other connections

- h **POWER**  
For connecting the projector to the mains.

6. Set Up

Positioning the projector and screen

- Place the projector on a stable, level surface, out of direct sunlight and away from sources of excessive dust, dirt, heat, water, moisture, vibration and strong magnetic fields. Face the projector towards the screen for the best picture results. To determine the distance for the desired size, please refer to the Projection Assistant, a calculation programme included on the CD-ROM.



- The screen should be positioned so that it is not directly touched by sunlight or artificial light, as this will wash out the colours of the picture, making it hard to see.
- The projector can be used for both front projection, rear projection and ceiling projection applications. As default factory setting, the projector has been set up for front projection. You can change to rear or ceiling projection via the OSD menu. See 'Rear screen projection' and 'Ceiling-mount projection' under 'Operation - Display and picture control' for further instructions.
- Choose a screen size suitable for the number of viewers and the size of the room.
- Picture quality is best when you sit directly in front of the projector screen.

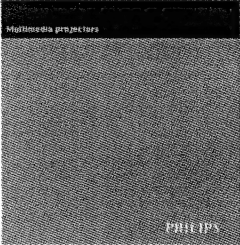
Mains supply

1. Insert the mains lead into the projectors **POWER** socket and connect it to the wall socket.

**Note:** The standby indicator lights up red, the projector is now in the Power/Standby mode.



2. Remove the lens cap.  
3. Press the **STANDBY ON/OFF** button to switch on the projector.
- The lamp indicator flashes green and the start-up screen appears for 5 seconds.
  - When the projection lamp is on, the lamp indicator lights up green.

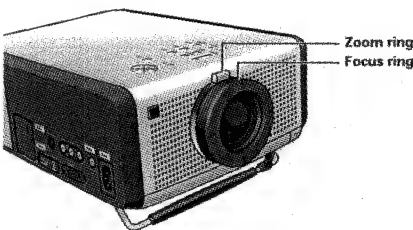


4. To switch off the mains supply completely, pull the mains plug out of the wall socket.

**Note:** Before disconnecting the mains lead, make sure that the cooling fan has stopped (about 3 minutes after the projector has been switched to Power Standby).

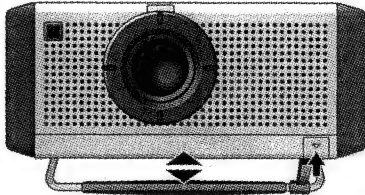
Adjusting the focus and size of the image

- Use the **ZOOM** ring to adjust the size of the image.
- Use the **FOCUS** ring to adjust the focus of the image.



Adjusting the vertical and horizontal angle of the projector

**Vertical angle**  
Use the Height/Level Adjuster to adjust the vertical angle of the projector as specified under 'Positioning the projector and screen'.



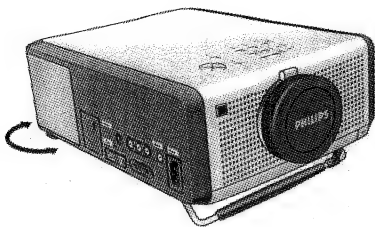
**To Raise:** press the adjuster carefully and lift to raise the projector.  
**To Lower:** press the adjuster carefully again to lower the projector.

- Use the **FOCUS** Ring and **ZOOM** Ring to readjust the focus and size of the image.

6. Set Up

**Horizontal angle (horizon)**

- Adjust or correct a possible tilted picture by turning the horizontal adjusters to the desired position.



**Up:** turn the adjuster(s) to the left.  
**Down:** turn the adjuster(s) to the right.

- Use the FOCUS Ring and ZOOM Ring to readjust the focus and size of the image.

**Vertical keystone correction**

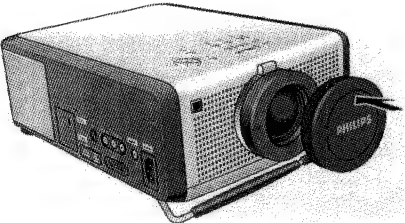
If projector and screen are not properly placed, the picture will be distorted, producing a keystone image. Vertical keystone correction allows you to correct picture distortion of the vertical keystone type by internal scaling. This correction function is accessible through the 'Keystone Correction' option in the 'Display' submenu of the On Screen Display (OSD) menu. For details see the explanation in 'Display and Picture Control'.



Keystone Image

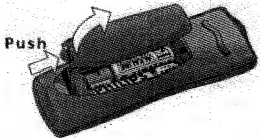
**Moving the projector**

- Press the STANDBY/ON/OFF button to switch off the projector. The standby indicator lights up red.
- Wait until the cooling fan has stopped (about 3 minutes after the projector has been switched off) and disconnect the mains lead and all other cables.
- Make sure the lens is turned back in to prevent damage to the lens.
- Put the lens cap back in place to prevent dust, dirt or other contamination from harming or damaging the front of the projector lens when moving the projector.



**Note:** Never place the projector on the side where the connections are located.

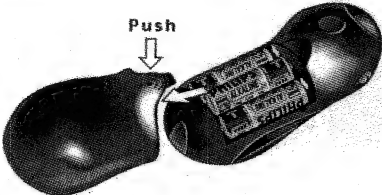
**Inserting the batteries in the compact remote control**



- Push and slide the lid in the direction of the arrow.
- Install two 'AAA' batteries as indicated inside the battery compartment.
- Replace the lid and snap it into place.

**Note:** The maximum range of the remote control is approximately 15 m (± 50 feet).

**Inserting the batteries in the trackball remote control (optional)**



- Push and slide the lid in the direction of the arrow.
- Install three 'AA' batteries as indicated inside the battery compartment.
- Replace the lid and snap it into place.

**Caution!**

Do not mix old and new batteries (also never mix alkaline and manganese batteries).

**Note:** The maximum range of the remote control is approximately 20 m (± 65 feet).

7. Installation

Video/computer cables and adapter

No.	CABLE/ADAPTER	CONNECTIONS	
		Projector side	Computer/AV products side
1	Computer VGA Cable	Mini D-Sub 15P (male)	Mini D-Sub 15P (male)
2	RCA Audio Video Cable	RCA pin (male) x 3	RCA pin (male) x 3
3	Scart/RCA-AV Adapter (depending on region)		
4	USB computer cable	USB connector 4P (female)	USB connector 4P (female)

**Video/computer cables and adapter**

These accessories (1 to 4) are supplied with the product for connecting the projector to computer/AV equipment. The numbers in the left-hand column correspond with the numbers in the connection diagrams on the following pages.

**Optional cables and adapter:**

- Programmable VGA MAC adapter
- VGA Y-cable for external monitor: D-Sub M 15P (male) to 2x D-Sub M 15P (female)

7. Installation

Connecting to a computer

**Connecting to a computer**

**General**

**Caution!**

- The data input is suitable for both Apple Macintosh computers (Power Book and Power Mac) as well as for IBM compatible PCs.
- The data output of IBM compatible PCs can be connected directly to the projector using standard data cables.
- Apple Macintosh computers may need a conversion plug (optional) added to the standard data cable.
- The figures in brackets (1) correspond to the figures in the accessories diagram. The characters in brackets (a) correspond to the characters in fig. 2 of 'Controls and connections'.

**USB connection**

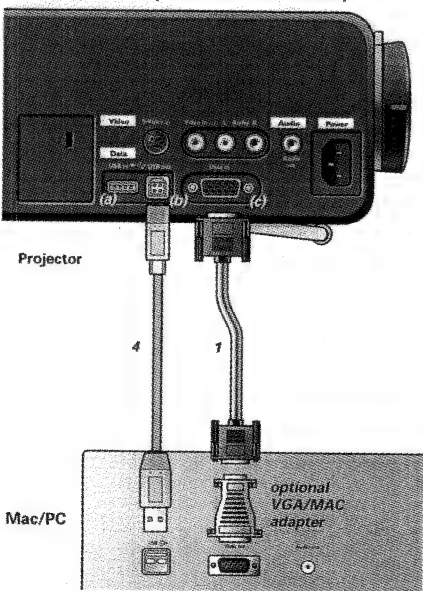
A USB interface with hub function is available via one upstream and one downstream connector. The USB interface is a powered hub to allow connection of USB devices without own power. It is possible to (dis)connect devices during operation (hot plug and play). When connecting USB peripherals for the first time, it is possible that the computer requires the installation CD of the computer's operating system.

When the projector's **USB out (upstream) connector** is connected to a PC or an Apple Macintosh computer equipped with a USB downlink connection, it will identify as a USB device. It is possible to:

- control the cursor of the computer via the projector remote control,
- play audio information from the computer via the projector speaker, and
- the display settings of the computer will be changed to fit the capability of the projector.

Connected to the projector's **USB in (downstream) connector**, USB peripherals like speakers, a mouse, a document video camera, a keyboard, a wireless connection box or a printer are easily connected and operated. Power for the peripheral is supplied by the projector.

**PC (Desk Top/Lap Top)/ MACINTOSH (Desk Top/Power Book/Power Mac)**



- Connect the DATA OUT terminal of the computer to the DATA IN terminal (c) of the projector and secure the plugs by tightening the thumb screws. For this, use the VGA cable (1) supplied. When connecting the projector to a Macintosh computer use the VGA/MAC adaptor (optional).
- Connect the USB out (upstream) socket (b) of the projector to the USB downstream port of the computer. For this, use the USB cable (4) supplied. You can now manipulate the mouse cursor on the computer and on the screen, using Cursor Control. Audio information from the computer will be played via the projector speaker.
- When required, you can connect an USB peripheral to the USB in (downstream) socket (a) of the projector. Peripheral can be connected while the projector is on (hot plug and play).

**Note:** If the mouse cursor does not react when moving the cursor control on the remote control:

- Check that the Remote Control indicator on the projector flashes green when you move the trackball.
- If it does not: Check that you have switched on the remote control. If you have, check that the batteries are installed properly and/or replace the batteries.
- If it does: Make sure that the USB cable has been properly connected.

7. Installation

**Connecting to video equipment**

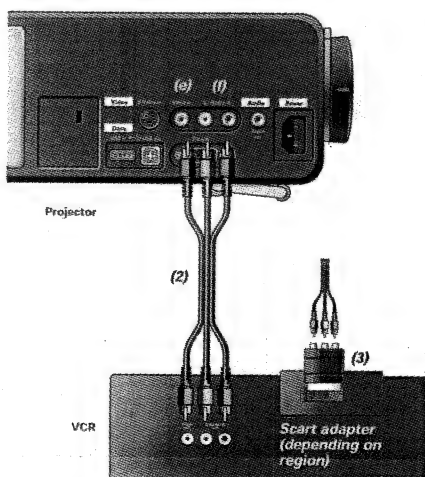
**General**

- The figures in brackets (1) correspond to the figures in the accessories diagram. The characters in brackets (a) correspond to the characters in fig. 2 of 'Controls and connections'.

**Caution!**

Always switch off the projector before making any connections.

**PAL, NTSC, SECAM**



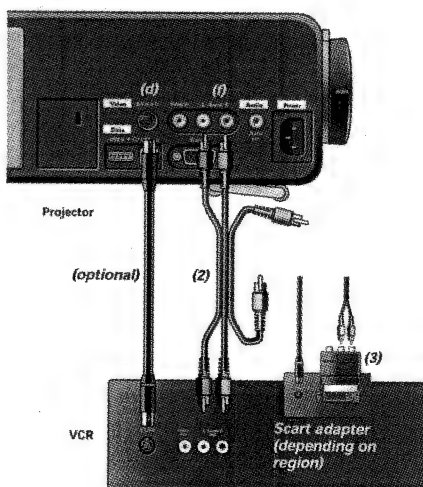
- Connect the video OUT socket of a VCR, Laser Disc player, video camera or TV to the VIDEO IN socket (e) of the projector. For this, use the video/audio connection cable (2) supplied.
- Connect the audio OUT L/R sockets of the VCR, Laser Disc player, video camera or TV to the AUDIO L/R sockets (f) of the projector. Insert the white plug into the L socket and the red plug into the R socket.

**In case your VCR, Laser Disc player, video camera or TV is equipped with a Scart connector (depending on region):**

- Connect the Scart/RCA Audio Video adapter (3) supplied to the Scart connector of the VCR, Laser Disc player, video camera or TV.
- Plug the video/audio connection cable (2) supplied into both the adapter and the Video in (e) and Audio L/R sockets (f) of the projector.

Connecting to video equipment

**S-VHS**



- Connect the S-video OUT socket of a S-VHS video recorder, Laser Disc player, video camera or TV to the S-video IN socket (d) of the projector. For this use an (optional) S-video connection cable.
- Connect the audio OUT L/R sockets of the S-VHS video recorder, Laser Disc player, video camera or TV to the AUDIO L/R sockets (f) of the projector. For this, use the red and white audio connectors of the audio/video connection cable. Insert the white plug into the L socket and the red plug into the R socket.

**In case your VCR, Laser Disc player, video camera or TV is equipped with a Scart connector (depending on region):**

- Connect the Scart/RCA Audio Video adapter (3) supplied to the Scart connector of the VCR, Laser Disc player, video camera or TV.
- Plug the audio/video connection cable supplied into both the adapter and the Audio L/R sockets (f) of the projector. Insert the white plug into the L socket and the red plug into the R socket.
- Plug an (optional) S-Video connection cable into the VCR and the S-VIDEO in socket (d) of the projector.



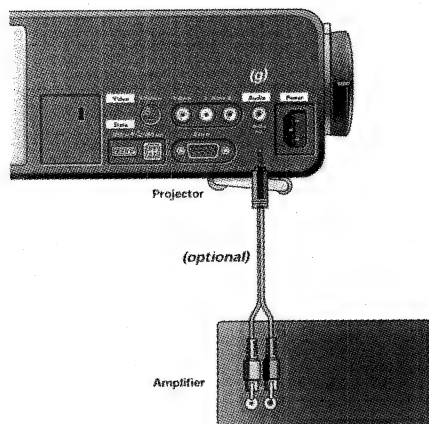
7. Installation

Connecting to audio equipment

**General**  
The characters in brackets (a) correspond to the characters in fig. 2 of 'Controls and connections'.

Caution!

Always switch off the projector before making any connections.  
Always turn down the volume control of the connected amplifier before switching it on, to prevent damage to the speakers.



- Connect the AUDIO IN/LR sockets of an amplifier or stereo system to the AUDIO OUT socket (g) of the projector. Insert the white plug into the L socket and the red plug into the R socket.

**Note:** When the projector is connected to an external audio amplifier, you cannot control the volume via the projector or the remote control. However, the sound can still be muted via the projector or the remote control.

Connecting to audio equipment

7. Installation

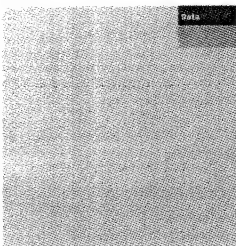
Connecting to an external monitor

**General**  
The characters in brackets (a) correspond to characters in fig. 2 of 'Controls and connections'.

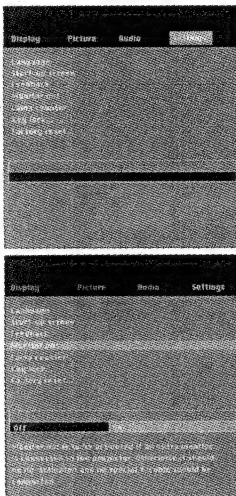
Caution!

Always switch off PC, external monitor and projector before making any connections.

- Connect the single end of the optional VGA Y-cable to the data in socket (b) of your projector.
- Connect the VGA cable between the PC and one of the free VGA Y-cable connectors.
- Connect the last VGA Y-cable connector to the VGA cable of the monitor.
- Switch on your PC.
- Switch on the projector.
- Press DATA to select data input.
- Press MENU.



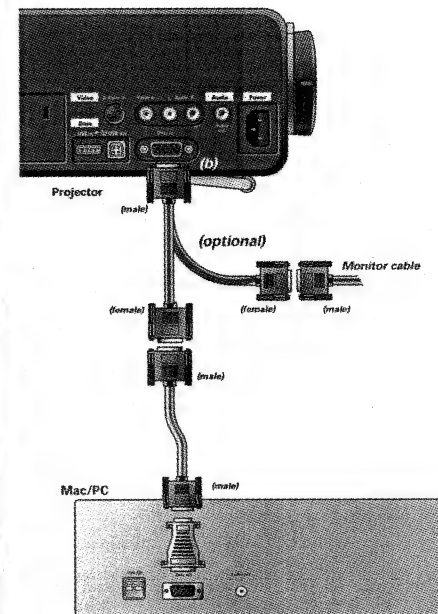
- Use Cursor Control to select SETTINGS in the menu bar.
- Use Cursor Control to select MONITOR OUT.
- Use Cursor Control to select ON.
- Press OK (→/←) to activate.
- The projector will indicate the necessity to connect the Y-cable.
- Switch on the external monitor.



Connecting to an external monitor

To obtain the audio signal on the monitor instead of on the projector:  
• Connect the AUDIO IN sockets of the monitor to the AUDIO OUT socket (g) of the projector.  
• Insert the white plug into the L socket and the red plug into the R socket.  
Some monitors have a single AUDIO IN socket for which a different audio connection cable with a 3.5 mm mini jack is required.

**Notes:**  
- One external monitor or projector can be connected at a time.  
- For further details on the operation with On Screen Displays see chapter '8 Operation'.



8. Operation

Preparation

General

- Press the STANDBY/ON/OFF button to switch on the projector.  
The lamp indicator flashes green and the start up screen appears for 5 seconds.  
When the average lamp life time has almost expired and less than 100 hours remain, the message 'Warning: lamp life has almost expired' will be displayed on the screen when switching the projector on. For this refer to the section 'Lamp' under 'Maintenance'.
- When the lamp is on, the lamp indicator lights up green.  
If you use the optional trackball remote control:  
Set the ON/OFF switch of the remote control to ON in order to switch on the remote control.  
If required, press the light button of the remote control. When this button is pressed, the button illumination is switched on for 5 seconds. Every time one of the buttons is pressed within these 5 seconds, the illumination time is extended by a further 5 seconds.
- Select the required source (Data, Video or S-Video) by pressing the corresponding source selection button.

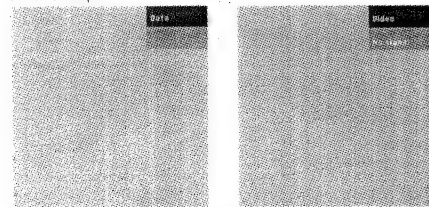
**Note:** The source selection button VIDEO of the optional trackball remote control toggles between Video and S-Video.

- Switch on the computer or start video playback.  
A feedback message appears on the screen, indicating the selected source.

**Feedback messages - General explanation**  
Feedback messages are displayed in the top right corner of the screen. They are displayed when:  
- a signal comes up or goes down,  
- when an input source is changed,  
- when the A/V Mute or the Mute functions are toggled,  
- when the Auto image function is set to ON.

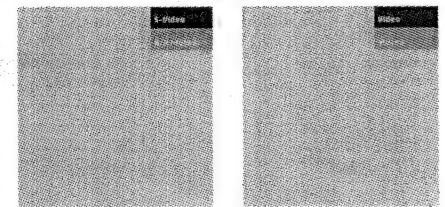
These messages will only be displayed when the menu option FEEDBACK is set to 'on' in the SETTINGS menu. All messages, except the A/V Mute message, will be removed automatically after 4 seconds.

Some examples:



Data selected as source. Video selected as source, no input signal.

Preparation



S-Video selected as source, A/V muted. Video selected as source, Mute.

**Error messages - General explanation**  
Error messages are displayed in the centre of the screen. The problem is described in the header of the message display. Suggestion(s) to solve the problem are displayed in the gray part of the message display.



On Screen Display menu - General explanation

All video and data adjustments and settings (except A/V Mute) are done via On Screen Displays and with help of MENU, OK (→/←) and Cursor Control on the projector or the remote control.

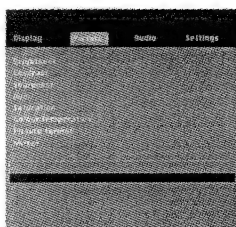


- Press MENU.  
The menu bar appears on the screen.  
The first item is highlighted and its sub menu is shown.  
Depending on the selected source (Data, Video or S-Video) some options of the submenu may be greyed out. This indicates that these functions:  
- are not available in a certain mode,  
- have no function for the selected source.

**For example:**  
- HORIZONTAL SIZE under submenu DISPLAY when AUTO IMAGE is switched to ON.  
- HUE under submenu PICTURE when signal type is not NTSC.

8. Operation

- Use Cursor Control left and/or right to move the cursor to any other item in the menu bar.



- Select the sub menu item to be adjusted using Cursor Control up and/or down.
- Adjust the selected item in the action window at the bottom of the screen, using Cursor Control left and/or right.
- Select the next item to be adjusted in the sub menu and adjust as described above.
- Press MENU to close the On Screen Display.

**Language selection**  
The projector can display menus in one of six different languages.

- Press MENU.  
The menu bar appears on the screen.
- Use Cursor Control to select SETTINGS in the menu bar.
- Use Cursor Control to select LANGUAGE from the sub menu.
- Use Cursor Control to select the required language in the action window.
- Press OK (→/←) to confirm and store the selected language.
- If required, select the next item to be adjusted or press MENU to exit.

Display and picture control

The projector's picture is set to standard specifications at the factory. However, you can adjust the image to suit your own preferences.  
The projector will store the last used settings for every source. So when you switch from one source to another, the settings of the source switched from will be stored and the settings of the source switched to will be recalled.  
When the projector is switched off and on again the settings for the selected source will be recalled again.

- Data only**  
For data signal input, the following adjustments can be made:
- Auto image**  
automatically sizes and positions the image to fit optimally in the screen picture;
  - Horizontal size**  
adjusts the computer image in a horizontal direction to make the image completely fill the screen;
  - Shift**  
adjusts the computer image in horizontal and vertical direction to centre it on the screen;
  - Phase**  
when connecting the projector to your PC for the first time, be sure to adjust the phase control for optimal readability of the projected text;

Preparation/Display and picture control

**Tip for Windows users:**  
To adjust size and phase correctly:  
1. Select 'Start' and then 'Shut down'.  
2. Adjust the projector's size control, so that no vertical bars are visible.  
3. Now adjust the projector's phase control for maximum brightness of the projected image.  
4. Press 'No' in the Windows shutdown screen to cancel the shutdown action.

**Data and Video/S-Video**  
For both data and video/s-video signal input, the following adjustments can be made:

- Digital Freeze**  
captures a moving picture (still picture);
- Digital Zoom**  
enlarges a part of the picture;
- Pan**  
selects another section of enlarged picture (in combination with digital zoom);
- Keystone Correction**  
corrects picture distortion of the vertical keystone type by internal scaling;
- Brightness**  
adjusts brightness of the displayed picture;
- Contrast**  
adjusts the overall contrast intensity;
- Sharpness**  
controls the contour impression of the picture;
- Colour Temperature**  
adjusts the overall picture impression from warm to cool;
- Picture Format**  
selects one of three picture format options (4:3, 16:9 or 16:9 enlarged);
- Mirror**  
mirrors the picture for use of the projector in various positions with respect to the user(s) and the projection screen (for further explanation see 'Display and picture control' - 'Mirror').

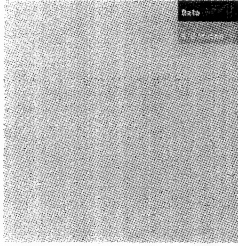
**Video/S-Video only**  
For Video/S-Video signal input, the following adjustments can be made:

- Hue (only for NTSC)**  
adjusts the tint of the projected image;
- Saturation**  
adjusts the colour saturation of the projected image.

8. Operation

Display and picture control

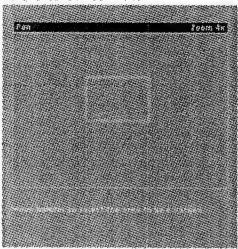
**Notes:** - When you have selected the menu mode, you cannot use the source selection buttons on the projector or on the remote control to select another input. Press MENU to exit if you want to change another input source.  
- **Audio/Video mute** can only be selected with the A/V MUTE button on the projector or on the remote control. A/V mute then appears on the screen.  
**For example:**



The following adjustments procedures follow a slightly different sequence of actions, or may need some further explanation.

**Pan**  
To view an enlarged area of the projected picture the PAN function is used. Panning is only possible when the picture is enlarged with DIGITAL ZOOM. If the picture is not enlarged, the panning option is greyed out.

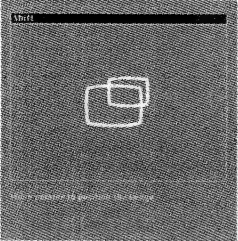
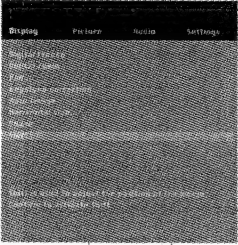
1. Press MENU.
  - The menu bar will appear again.
2. Use Cursor Control to move the cursor to PAN.
3. Press OK (↵) to activate PAN.
4. Use Cursor Control to pan left, right, up or down.
5. Press MENU to return to the start position.
  - The On Screen Display will be closed.



**Horizontal size**  
The HORIZONTAL SIZE function is used to size a computer image to make it fit the projected picture, both horizontally and vertically. The horizontal size parameter has permanent scope. When the OSD menu is active and the horizontal size option is selected, the level will be indicated graphically on a linear scale (gauge). The default output level conforms to the value set by the AUTO IMAGE function. Switching to another data mode automatically restores AUTO IMAGE if the data mode is not part of the ten most recently used display modes.

**Shift**  
The SHIFT function adjusts the computer image in horizontal and vertical direction to center it on the screen. This function is only active when AUTO IMAGE is set to OFF.

1. Press MENU.
  - The menu bar appears on the screen.
2. Use Cursor Control to move the cursor to SHIFT.
3. Press OK (↵) to activate SHIFT.
4. Use Cursor Control to position the computer image.
5. Press OK (↵) to confirm and store the adjustment.
6. If required, select the next item to be adjusted or press MENU to exit.



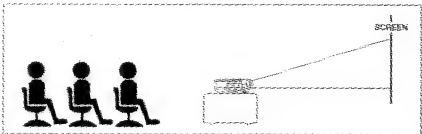
**Auto image**  
The auto image function automatically sizes and positions the image to fit optimally in the screen picture. In addition it takes care for phase adjustment. It does not affect the selected picture format. When AUTO IMAGE is set to ON, the HORIZONTAL SIZE, SHIFT and PHASE options are greyed out.

8. Operation

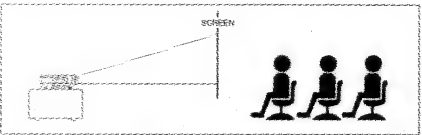
Display and picture control/Audio control

**Mirror**  
The projector can be used in various positions with respect to the viewers and the projection screen. With the MIRROR function the picture can be displayed in a way that is suitable for a specific application.

**Rear screen projection**  
The image can be flipped to a horizontal mirror image of the input signal for rear screen projection.

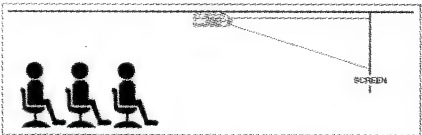


Front projection



Rear projection

**Ceiling-mount projection**  
The projector is equipped with an upside-down scan function (vertical mirror), which allows the image to be flipped when the projector is mounted upside down to the ceiling.



Ceiling projection

1. Press MENU.
  - The menu bar appears on the screen.
2. Use Cursor Control to select PICTURE in the menu bar.
3. Use Cursor Control to select MIRROR from the sub menu.
4. Use Cursor Control to select the correct setting for your application. This is the setting at which the letters 'AB' are correctly projected (AB).
5. Press OK (↵) to confirm and store the selection.
6. If required, select another item you wish to adjust or press MENU to exit.

Audio Control

The projector's sound is set to standard specifications at the factory. However, you can adjust the sound to suit your own preferences by using the AUDIO CONTROL feature. The following adjustments can be made:

- **Volume** - adjusts the sound level;
- **Bass** - adjusts the bass tones;
- **Treble** - adjusts the high tones;
- **Mute** - mutes the sound of the projector (or an externally connected loudspeaker).

1. Select the required input (Data, Video or S-Video).
2. Press MENU.
  - The menu bar appears on the screen.
3. Use Cursor Control to select AUDIO in the menu bar.
4. Use Cursor Control to select the item to be adjusted.
5. Use Cursor Control to make the required adjustment in the action window.
6. If required, select the next item to be adjusted or press MENU to exit.

**Notes:** - The volume can also be adjusted with the - VOLUME + buttons on the projector or on the remote control.  
- When the projector is connected to an amplifier or stereo system, the volume must be adjusted on the amplifier or stereo system.

**Caution!**  
Always reduce/check the volume setting of connected amplifiers before switching off (A/V) mute, to prevent damage to speakers.

8. Operation

Other Settings

**Other Settings**  
The projector is equipped with the following functions to optimize its use and handling:

**Start-up screen**  
This function allows you to specify the image to be displayed upon the projector's startup. The default Philips start-up screen and no signal screen can be suppressed. A black screen is displayed instead at projector start up.

1. Press MENU.
  - The menu bar appears on the screen.
2. Use Cursor Control to move the cursor to SETTINGS.
3. Select START-UP SCREEN by using Cursor Control.
4. Select ON to use the default setting or OFF to use a black start-up screen.
5. Press OK (↵) to confirm and store the adjustment.
6. Select the next item to be adjusted in the sub menu and adjust as described above.
7. Press MENU to close the On Screen Display.

**Feedback**  
This function allows you to suppress OSD messages. Warning or error messages however are never suppressed.

1. Press MENU.
  - The menu bar appears on the screen.
2. Use Cursor Control to move the cursor to SETTINGS.
3. Select FEEDBACK by using Cursor Control.
4. Select ON to have OSD screens displayed or OFF to suppress the display of OSD screens.
5. Press OK (↵) to confirm and store the adjustment.
6. Select the next item to be adjusted in the sub menu and adjust as described above.
7. Press MENU to close the On Screen Display.

**Key lock**  
Key lock is used to de-activate all remote and local controls. You have to switch the projector off and on again by pulling out the mains cable to unlock the keys.

1. Press MENU.
  - The menu bar appears on the screen.
2. Use Cursor Control to move the cursor to SETTINGS.
3. Select KEY LOCK by using Cursor Control.
4. Press OK (↵) for 3 seconds to lock all keys.
5. The On Screen Display will disappear automatically.

**Factory reset**  
This function is used to reset all user settings to the default factory settings.

1. Press MENU.
  - The menu bar appears on the screen.
2. Use Cursor Control to move the cursor to SETTINGS.
3. Select FACTORY RESET by using Cursor Control.
4. Press OK (↵) for 3 seconds to reset all user settings.
5. Select the next item to be adjusted in the sub menu or press MENU to close the On Screen Display.

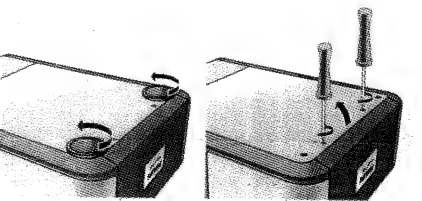
9. Maintenance

**Cleaning**  
**Caution!**  
Switch off and disconnect the projector before cleaning.

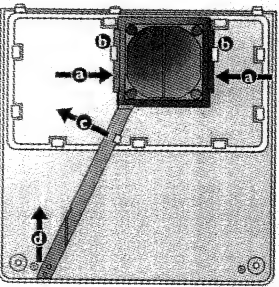
1. When the cabinet is dusty, clean it by gently wiping with a soft cloth.
2. A chamois leather slightly moistened with water is sufficient for cleaning the housing.
3. Do not use cleaning agents as they may harm the housing.

**Always keep the lens clean**  
1. When the lens is dirty or dusty, first blow the dust off and then gently wipe with a soft brush or lens cleaning paper. Never touch the lens with your fingers.  
2. The lens is likely to become mouldy if left dirty.

- Cleaning the dust filter**
1. Press the STANDBY ON/OFF button to switch off the projector.
    - The standby indicator lights up red.
  2. Wait until the cooling fan has stopped (about 3 minutes after the projector has been switched off) and disconnect the mains lead and all other cables.
  3. Turn the projector over. Never place the projector on the side where the connections are located!
  4. Unscrew and remove both horizontal adjusters.
  5. Unscrew the screws at the bottom of the cover and remove the cover.

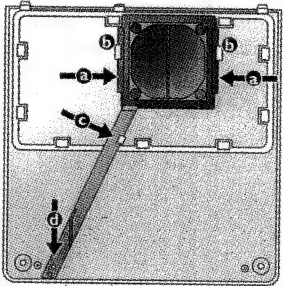


6. Remove the filter from its compartment.
  - Press both sides of the filter (a) until it comes loose from the clips (b).
  - Move the handle to the left (c).
  - Remove the handle from the catch and lift upwards (d).
  - Carefully lift the filter out of its compartment.



7. While firmly holding the filter, gently remove any accumulated dust with a vacuum cleaner.

8. Replace the filter:
  - Press both sides of the filter (a) and place it back into its compartment.
  - Loosen the sides of the filter so it will fall back in position under the clips (b).
  - Position the handle under the clip (c).
  - Slide the handle over the catch and click it back in position (d).



9. Replace the cover and tighten both the screws and the horizontal adjusters.

**Notes:** - We advise you to clean the filter every 100 hours.  
- Operating the projector with a torn or damaged filter may cause damage to the projector.  
- When the filter is damaged replace it with a filter of the same type (12 nc: 4822 480 10229).  
- The projector power cannot be switched on again unless the filter holder is installed correctly.

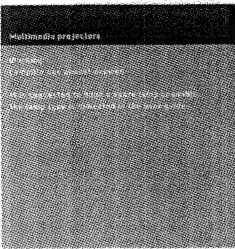
**Maintenance of your remote control**  
Your trackball on the remote control is very durable and will provide years of use. It has a self-cleaning ball-cage that helps prevent dust and lint built-up around the ball. If the screen cursor jumps or moves abnormally, we recommend that you clean the trackball manually.

- To clean your trackball**
1. Turn the retainer ring counter-clockwise to remove the ball.
  2. Wipe the ball with a clean, lint-free cloth.
  3. Blow carefully into the ball cage to dislodge dust and lint.
  4. Look for a build up of dirt on the rubber rollers inside the ball cage. This build up usually appears as a stripe running around the middle of the roller.
  5. If dirty, clean the rollers using a cotton swab moistened lightly with isopropyl (rubbing) alcohol. After cleaning, make sure the rollers are still centered in their channels.
  6. Make sure that fluff from the swab is not left on the rollers.
  7. Replace the ball and retainer ring.

9. Maintenance

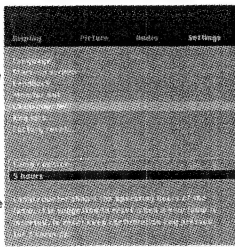
Lamp

When operation time reaches the last 100 hours of the average lamp life, the message 'Warning: lamp life has almost expired' will be displayed on the screen, each time the projector is switched on.

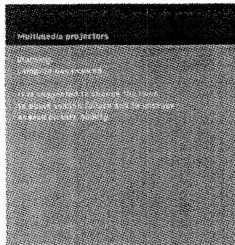


The lamp life remaining can be checked using the OSD menu.

1. Press the MENU.
2. The menu bar appears on the screen.
3. Use Cursor Control to move the cursor to SETTINGS.
4. Use Cursor Control to select LAMP COUNTER.
5. The remaining lamp life hours are displayed in the action window at the bottom of the screen.

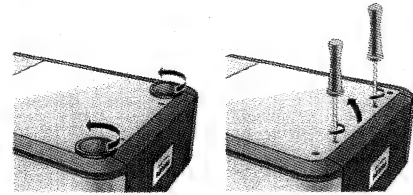


When the lamp life has expired, the lamp indicator lights up orange and the message 'Warning: lamp life has expired' is displayed on the screen.

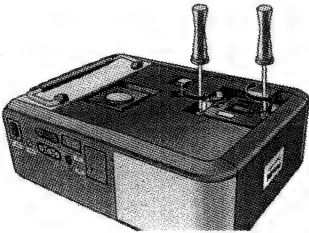


Lamp Replacement

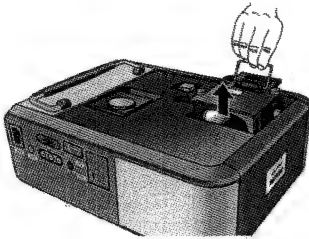
1. Press the STANDBY/ON/OFF button to switch off the projector.
2. Wait 5 minutes for the lamp to cool down and the cooling fan to stop and disconnect the mains lead and all other cables.
3. Turn the projector over. *Never place the projector on the side where the connections are located!*
4. Unscrew and remove both horizontal adjusters.
5. Unscrew the screws at the bottom of the cover and remove the cover.



6. Read the caution and warning labels on the lamp cover.
7. Unscrew the lamp holder.



8. Grasp the lamp holder handle and carefully pull the lamp holder out of the projector.

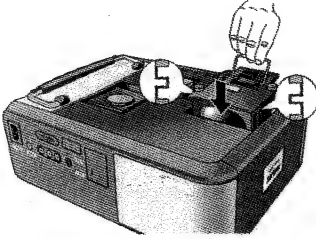


Caution!

- Be very careful. The lamp and lamp holder may still be too hot to touch.
- Keep lamp holder opening to your right. Do not touch lamp or point lamp holder opening at anyone.
- A high-pressure lamp may break if handled improperly.

9. Maintenance

9. Carefully remove the new lamp housing from its package. Do not touch lamp or point lamp housing opening at anyone. Do not drop, as the impact may cause the lamp to break.
10. Place the lamp holder in the guiding slots and insert into the lamp compartment.

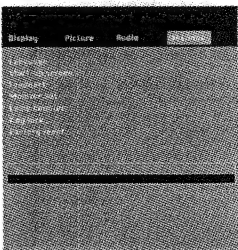


11. Tighten the screws.
12. Replace the cover and tighten both the screws and the horizontal adjusters.
13. Plug the projector back in by inserting the mains lead in the POWER socket.
14. Press the STANDBY/ON/OFF button to switch on the projector.
15. Reset the lamp life time (see 'Resetting the lamp life time').
16. Properly dispose of the old lamp.

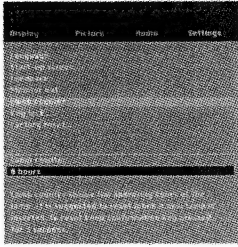
**Note:** When replacing the lamp, always use the same type of lamp (LCA 3109/00, 12NC: 8670 931 09009).

Resetting the lamp life time

1. Press MENU.
2. The menu bar appears on the screen.
3. Use cursor control to select SETTINGS in the menu bar.



3. Use cursor control to select LAMP COUNTER in the sub menu.



4. Press OK (~/~) for 3 seconds to reset the lamp counter.
5. If required, select another item you wish to adjust or press MENU to exit.

10. Troubleshooting

If a fault occurs, first check the points listed below before taking the projector for repair. If you are unable to remedy a problem by following these hints, consult your dealer or service organisation.

Warning:

Under no circumstances should you try to repair the projector yourself as this could invalidate the warranty.

PROBLEM

- POSSIBLE CAUSE
- SOLUTION

Image is not displayed

- Mains lead is not correctly connected.
- Correctly connect mains lead.
- The filter holder is not installed correctly or is damaged.
- Install the filter holder correctly (see 'Cleaning the dust filter' under 'Maintenance').
- Lamp holder cover is not closed correctly or the lamp holder is damaged.
- Close the cover correctly (see 'Lamp replacement' under 'Maintenance').
- Signal cable not correctly connected.
- Connect signal cable correctly.
- The projector is in OFF position.
- Press STANDBY button to switch on the projector.

Lamp ceased to operate or does not light up at all (indicator lights up red)

- Lamp is still hot while the projector attempts to restart the lamp.
- Do not switch the set off; it will restart the lamp automatically within a few seconds.
- Lamp circuit failure or worn-out lamp.
- Take the projector to your nearest Service Centre, or
- Replace lamp (see 'Maintenance').
- Internal temperature of the projector is too high.
- Wait a few minutes and check to see if the air outlets are blocked.
- Disconnect and re-connect the mains cord to the projector. If the temperature in the meantime decreased sufficiently, the projector will start up in the standby mode.

Lamp indicator blinks orange

- Lamp life has almost expired (less than 100 hours to go).
- See warning message on the on start up screen for details.

Lamp indicator lights up orange

- Lamp life has expired.

Poor colour

- Wrong video system has been selected.
- Select the correct video system (see the selection of the video system under 'Operation').
- Adjust brightness, contrast, saturation or hue (see 'Display and picture control' under 'Operation').

Image is blurred

- Image is not focused.
- Adjust focus ring.
- Distance between projector and screen is not correct.
- Adjust the distance between the projector and the screen.
- Signal cable is not correctly connected.
- Connect signal cable correctly.

Image does not match up with the projected screen

- SHIFT and/or HORIZONTAL SIZE are not adjusted correctly.
- Adjust SHIFT or HORIZONTAL SIZE (See 'Display and Picture control', sections 'Data only' and 'Data and Video/S-Video').
- Activate the auto-image function via the On Screen menu.

Picture rolls

- Signal cable is not correctly connected.
- Connect signal cable correctly.

Picture too bright

- MONITOR OUT has been enabled, while no external monitor is connected.
- Disable the MONITOR OUT option. Press MENU and use cursor control to go to the SETTINGS item on the menu bar. Choose MONITOR OUT and select OFF.

Picture too dark or bright with external monitor connected

- MONITOR OUT has been enabled, but the external monitor is not correctly connected. (The picture on both displays is too bright)
- Connect the (optional) VGA Y-cable (See 'Connecting to an external monitor' under 'Installation').
- If the VGA Y-cable is correctly connected, verify whether the input impedance of the monitor is correctly set on 75 Ohm.
- MONITOR OUT has not been enabled, but the external monitor is connected. (The picture on both displays is too dark)
- Enable the MONITOR OUT option. Press MENU and use cursor control to go to the SETTINGS item on the menu bar. Select MONITOR OUT and select ON.

No sound

- Audio cable is not correctly connected.
- Connect audio cable correctly.
- Volume is not adjusted.
- Adjust volume.
- Mute or A/V mute is active.
- Cancel mute or A/V mute.

Caution!

Always reduce/check the volume setting of connected amplifiers before switching off (A/V) mute, to prevent damage to speakers.

The projector does not react to commands from the remote control

- Distance is too great.
- Reduce distance.
- Batteries are exhausted.
- Replace batteries (see 'Inserting the batteries in the remote control').
- IR sensor is obstructed.
- Remove obstacle.
- Remote control is not switched on (only optional trackball remote controls).
- Switch on the remote control.



## 8. Alignments

LC4242/4246

8-1

All the mirrors can be aligned, however only the mirrors mentioned below should be aligned. To place a mirror in it's nominal position, put a 2mm wide spacer between the mirror and the lighthouse, and then fix the mirror.

### 8.1 Integrator 1

Put on a white picture. If dark bars are visible on the edges, then integrator 1 has to be aligned. Unscrew the 2 screws (A) on top of integrator 1, and the integrator can be moved left-right. Align for minimal dark bars, and if possible align for middle position between dark edges. If dark edges are visible in the top or bottom, adding or removing small filling plates below the bracket fixing the integrator can align this.

### 8.2 Mirror B

Put on a green picture. If dark bands are visible on the sides, loosen the two screws (B) fixing the mirror on top, and move the mirror till the dark bands are gone.

### 8.3 Mirror C

Put on a red picture. If dark bands are visible on the sides, loosen the two screws (C) fixing the mirror on top, and move the mirror till the dark bands are gone.

### 8.4 Mirror D1

Put on a blue picture. If dark bands are visible on the sides, loosen the two screws (D) fixing the mirror on top, and move the mirror till the dark bands are gone.

### 8.5 Lens 3 green assy (polarizer green)

Put on a black picture. Loosen the screw (E) on top. Move the screw for minimal green in the picture.

### 8.6 Lens 3 red assy (polarizer red)

Put on a black picture. Loosen the screw (F) on top. Move the screw for minimal red in the picture.

### 8.7 Lens 6 blue assy (polarizer blue)

Put on a black picture. Loosen the screw (G) on top. Move the screw for minimal blue in the picture.

### 8.8 Convergence alignment

Remove the drive board. If the set is now switched on the picture will be fully white. Any convergence error will show up as a coloured band at one side of the picture.

The convergence should be aligned in such a way that the coloured bands are minimal.

Please note the projector will only work for a few minutes in this position. If the projector switches off, remove the mains, plug it back in, and the projector will work again. Putting the projector in service mode will stop it from switching off.

To align the convergence loosen the two torx screws (H) at the top of the LCD-holding plate so, that you can move the holding plate with the LCD freely, but not easily. Now grab the top of the holding plate (J) with the fingers of 2 hands. Move the plate with the LCD till the convergence is optimal (no coloured band on the side). This is easiest by first getting the picture straight, then moving the picture left right and then moving the picture up/down.

Always align convergence of red and blue with respect to green.

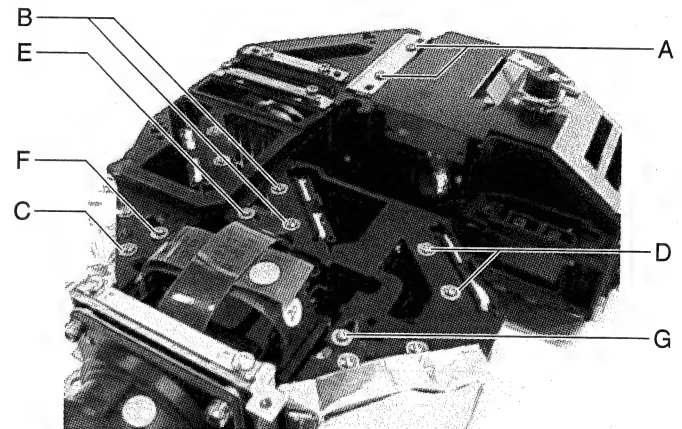


Fig. 8.1

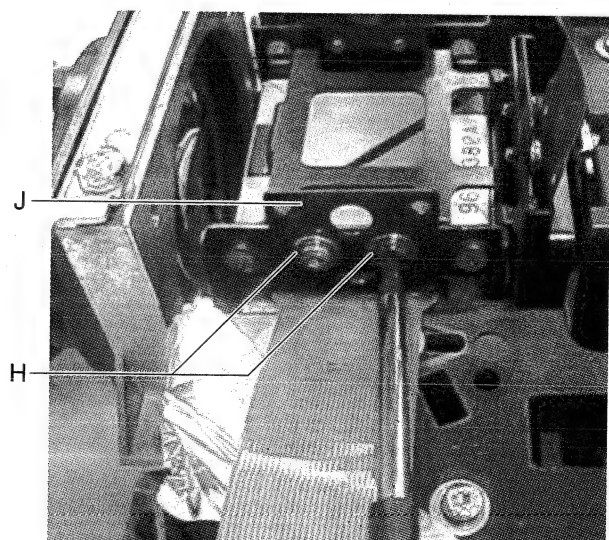
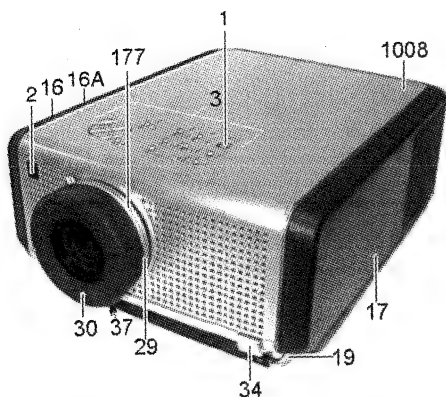
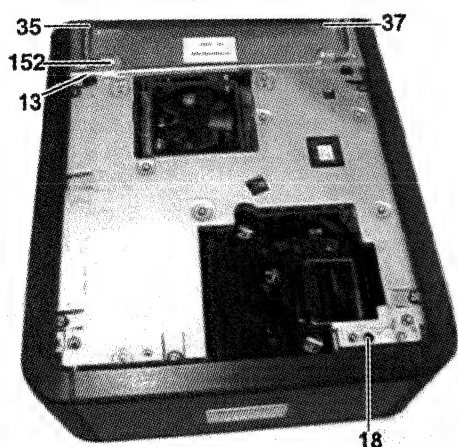


Fig. 8.2

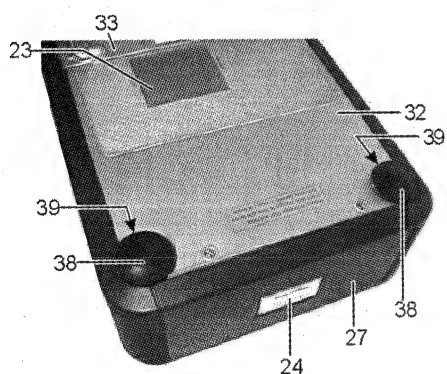
## 9. Parts lists - Mechanical parts



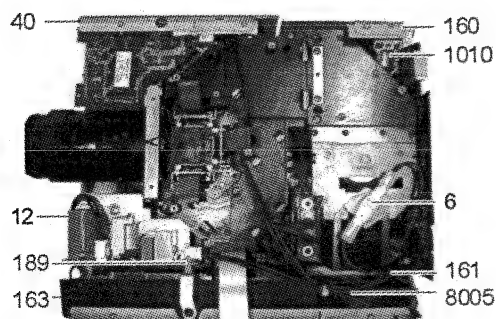
1	Knob set keyboard	4822 410 12096
2	Plastic lens IR	4822 381 12021
3	Light guide knobs	4822 380 10248
16	Cover connector side	3122 438 10920
16A	Side piece USB	3122 434 20920
17	Cover fan side	4822 442 01588
19	Adjustable foot	4822 462 11123
29	Zoom ring	3122 434 20890
30	Focus ring	3122 434 20720
34	Foot knob assy	3122 434 20430
37	Clip for foot	4822 401 11779
177	Zoom ring screw	4822 502 14624
1008	Top cover assy	4822 442 01815



13	Spring for foot knob	4822 492 11695
18	Switch mains	4822 276 14034
35	Foot rack	4822 402 11188
37	Clip for foot	3122 434 20470
152	Ring fixing foot	4822 402 11315



23	Dust filter	4822 480 10229
24	Logo Hopper LC4242	3122 438 10910
24	Logo Hopper LC4246	3122 438 10950
27	Rear cover	3122 434 10230
32	Door assy	3122 438 10870
33	Bottom cover	4822 442 01589
38	Rear foot	4822 462 11124
39	Foot spring rear	4822 492 11696



6	Thermal switch	2622 799 40276
12	Foil power supply	4822 466 12231
40	Mains input socket	4822 264 10386
160	Snap for speaker	4822 532 13144
161	Snap for lampfan	4822 532 13145
163	Distance piece lamp supply	4822 532 13146
189	Distance piece power supply	4822 404 10968
1010	Loudspeaker 16R 2W	4822 240 10333



**Accessories**

Cable power Euro	4822 321 11399
Cable power USA	4822 321 10835
VGA cable	3122 438 75090
Lens cap Hopper	3122 434 20880
Scart/cinch adapter	2422 033 00345
Cable cinch A/V	4822 320 12281
Carrying case	4822 600 10824
User guide CD-ROM	3122 435 90480
RC9904/01	4822 219 10531
USB A to B	4822 320 12679

**Packaging**

Carton box	4822 600 10822
Top cushion	4822 466 12083
Bottom cushion	4822 466 12084
Outer box	4822 600 10823

**Lamp**

Lamp LCA 3109	8670 931 09009
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**Cables**

Flex foil SSB to VIB	4822 320 12552
Flat foil SSB to KB	3122 431 01390

**Fans**

Set fan	2822 031 01462
LCD fan	3122 431 01410
Mini lamp fan	3122 431 01380
PCS fan	3122 431 01400

**Electrical modules**

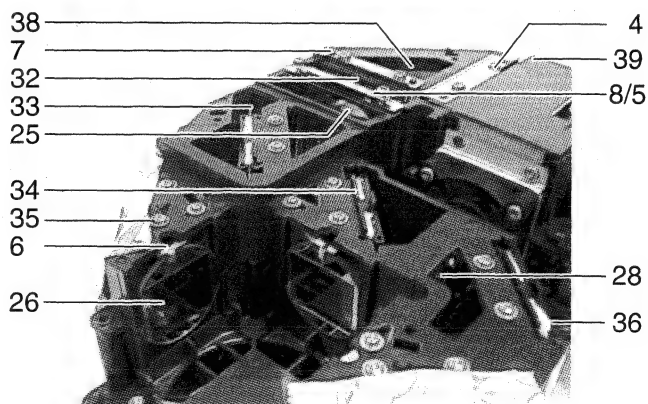
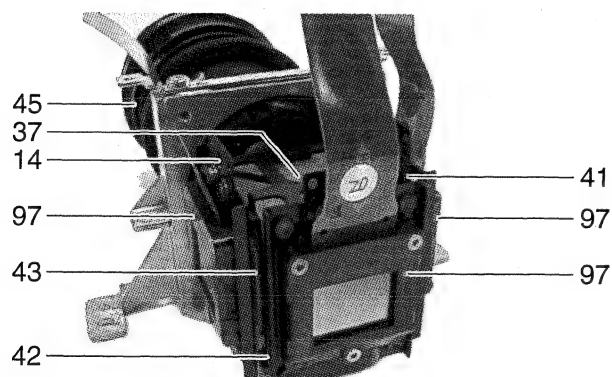
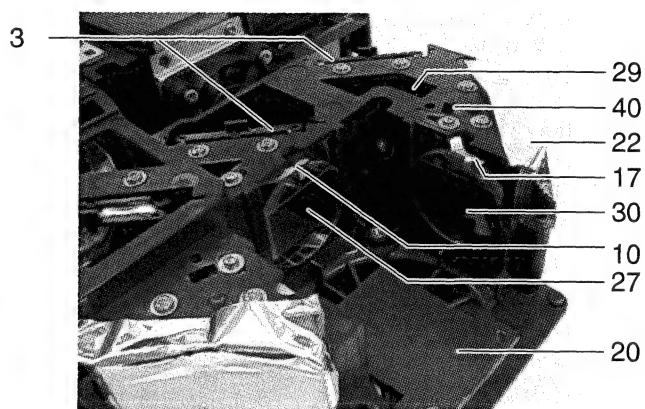
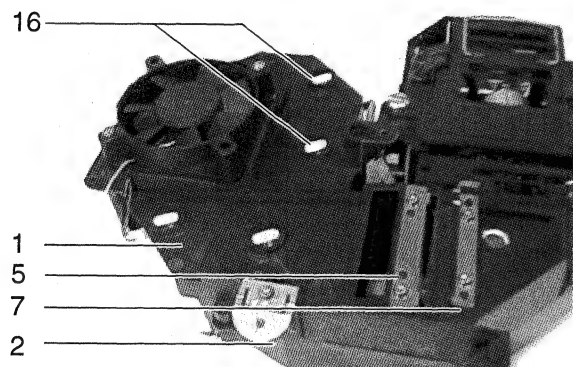
Small signal board	3122 438 50830
Interconnect board	3122 438 50860
XGA drive board	3122 438 50740
Lamp supply board	9137 001 34201
Power supply board	3122 438 00020
Mains filter board	3122 438 50750
Video input board	3122 438 50820
Keyboard	3122 438 50850
Infra red board	3122 438 50840

**Tools**

Service interface	3122 438 50870
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1	3122 434 10310	U-base
2	3122 434 10290	U-cover
3	3122 434 01050	M-stopper top
4	3122 437 50940	Integrator 1 assy
5	3122 431 34110	Stopper 1
6	3122 431 34120	L3 red stopper
7	3122 431 34130	Fold prism stopper
8	3122 431 34280	PBS stopper
10	3122 431 34290	L3 green stopper
14	3122 431 34180	Adjust plate
16	4822 402 11323	M stopper cosina
17	3122 431 34300	L6 stopper
20	3122 434 01060	Air guide
22	3122 434 92400	Mirror D2
25	3122 434 90450	Lens 2
26	3122 437 50820	Lens 3 red assy
27	3122 437 50830	Lens 3 green ass.
28	3122 434 90470	Lens 4 (Engine marked AA)
28	3123 434 90610	Lens 4b (Engine marked BB)
29	3122 434 90480	Lens 5

30	3122 437 50840	Lens 6 blue assy
32	3122 437 10550	PBS-integrator
33	3122 434 92340	Mirror A
34	3122 434 92350	Mirror B
35	3122 434 92360	Mirror C
36	3122 434 92370	Mirror D1
37	3122 437 50850	Dichr. prism assy
38	3122 434 91480	Folding prism
39	3122 434 94260	UV-filter
40	3122 434 94270	UV absorp filter
41	3122 437 50860	Analyzer red
42	3122 437 50870	Analyzer green
43	3122 437 50880	Analyzer blue
45	3122 434 90540	Projection lens
97	3122 430 01680	LCD with foil marked P09XG250
97	3122 430 01690	LCD with foil marked P09XG260
97	3122 430 01590	LCD with foil marked P09XG210
97	3122 430 01600	LCD with foil marked P09XG220



## Drive board

### Connectors

1000	4822 267 10987	55P
1700	4822 267 10666	30 P. FEM.
1800	4822 267 10666	30 P. FEM.
1900	4822 267 10666	30 P. FEM.

### Capacitors

2000	4822 126 13838	100NF 50V
2002	4822 124 12313	22UF 10V
2004	4822 126 13838	100NF 50V
2006	5322 126 11583	10NF
2008	4822 126 13838	100NF 50V
2010	4822 126 13838	100NF 50V
2012	4822 126 13838	100NF 50V
2014	5322 126 11583	10NF
2016	4822 124 12317	47UF 10V
2018	4822 124 12317	47UF 10V

2020	4822 124 12311	33UF 16V
2022	4822 124 12315	10UF 25V
2024	5322 126 11583	10NF
2026	5322 126 11583	10NF
2028	5322 126 11583	10NF
2030	5322 126 11583	10NF
2032	5322 126 11583	10NF
2034	5322 126 11583	10NF
2036	5322 126 11583	10NF
2038	5322 126 11583	10NF

2040	5322 126 11583	10NF
2042	5322 126 11583	10NF
2044	4822 122 31765	100PF 63V
2046	5322 126 11583	10NF
2048	5322 126 11583	10NF
2050	5322 126 11583	10NF
2052	5322 126 11583	10NF
2054	5322 126 11583	10NF
2056	5322 126 11583	10NF
2058	5322 126 11583	10NF

2060	4822 126 13838	100NF 50V
2062	5322 126 11583	10NF
2064	5322 126 11583	10NF
2066	5322 126 11583	10NF
2068	5322 126 11583	10NF
2070	5322 126 11583	10NF
2072	5322 126 11583	10NF
2078	4822 122 31765	100PF 63V
2080	4822 122 31765	100PF 63V
2100	4822 126 13838	100NF 50V

2102	4822 126 13838	100NF 50V
2106	5322 126 11578	1NF 50V
2108	4822 124 12317	47UF 10V
2112	5322 126 11578	1NF 50V
2116	5322 126 11578	1NF 50V
2118	4822 126 14043	1UF 16V
2120	5322 126 11579	3,3NF 63V
2122	4822 126 13193	4,7NF 63V
2124	5322 126 11579	3,3NF 63V
2126	4822 126 13193	4,7NF 63V

2128	4822 126 14043	1UF 16V
2130	4822 124 12314	15UF 16V
2132	4822 126 13838	100NF 50V
2134	5322 126 11579	3,3NF 63V
2136	4822 126 13193	4,7NF 63V

2138	4822 124 12317	47UF 10V
2140	4822 126 13838	100NF 50V
2142	4822 126 13881	470PF 50V
2144	4822 126 13881	470PF 50V
2146	4822 126 13881	470PF 50V

2148	4822 126 13883	220PF 50V
2150	4822 126 13883	220PF 50V
2152	4822 126 13883	220PF 50V
2154	4822 126 14043	1UF 16V
2156	4822 126 14043	1UF 16V
2200	4822 126 14043	1UF 16V
2202	4822 126 14043	1UF 16V
2204	4822 126 14043	1UF 16V
2206	4822 126 14043	1UF 16V
2300	4822 124 12317	47UF 10V

2302	4822 124 12321	33UF 6,3V
2308	4822 122 31765	100PF 63V
2310	4822 126 13838	100NF 50V
2312	4822 126 13881	470PF 50V
2314	4822 122 33777	47PF 63V
2316	4822 126 13838	100NF 50V
2318	4822 126 13838	100NF 50V
2320	4822 126 13838	100NF 50V
2322	4822 126 13838	100NF 50V
2324	4822 126 13838	100NF 50V

2326	5322 126 11583	10NF
2328	4822 122 33777	47PF 63V
2330	4822 122 33777	47PF 63V
2332	4822 126 13838	100NF 50V
2334	4822 122 33777	47PF 63V
2338	4822 126 13838	100NF 50V
2340	4822 126 13838	100NF 50V
2342	4822 126 13838	100NF 50V
2346	4822 126 13838	100NF 50V
2348	4822 126 13838	100NF 50V

2350	4822 126 13838	100NF 50V
2352	4822 126 13838	100NF 50V
2354	4822 126 13838	100NF 50V
2356	4822 122 33761	22PF 50V
2358	4822 126 13838	100NF 50V
2360	4822 122 33761	22PF 50V
2400	4822 124 12313	22UF 10V
2402	4822 124 12315	10UF 25V
2404	4822 124 12313	22UF 10V
2406	4822 124 12315	10UF 25V

2408	4822 126 13838	100NF 50V
2410	4822 126 13838	100NF 50V
2412	4822 126 13838	100NF 50V
2414	4822 126 14043	1UF 16V
2416	4822 126 13838	100NF 50V
2418	4822 126 13838	100NF 50V
2420	4822 126 13838	100NF 50V
2422	4822 126 14043	1UF 16V
2426	4822 126 13838	100NF 50V
2428	4822 122 31765	100PF 63V

2430	4822 122 31765	100PF 63V
2432	4822 126 13838	100NF 50V
2434	4822 126 13838	100NF 50V
2436	4822 126 14043	1UF 16V
2438	4822 126 14043	1UF 16V
2440	4822 122 33761	22PF 50V
2442	4822 122 33761	22PF 50V
2500	4822 124 12313	22UF 10V
2502	4822 124 12315	10UF 25V
2504	4822 124 12313	22UF 10V

2506	4822 124 12315	10UF 25V
2508	4822 126 13838	100NF 50V
2510	4822 126 13838	100NF 50V
2512	4822 126 13838	100NF 50V
2514	4822 126 14043	1UF 16V
2516	4822 126 13838	100NF 50V
2518	4822 126 13838	100NF 50V
2520	4822 126 13838	100NF 50V
2522	4822 126 14043	1UF 16V
2526	4822 126 13838	100NF 50V
2528	4822 122 31765	100PF 63V
2530	4822 122 31765	100PF 63V
2532	4822 126 13838	100NF 50V
2534	4822 126 13838	100NF 50V
2536	4822 126 14043	1UF 16V
2538	4822 126 14043	1UF 16V
2540	4822 122 33761	22PF 50V
2542	4822 122 33761	22PF 50V
2600	4822 124 12313	22UF 10V
2602	4822 124 12315	10UF 25V
2604	4822 124 12313	22UF 10V
2606	4822 124 12315	10UF 25V
2608	4822 126 13838	100NF 50V
2610	4822 126 13838	100NF 50V
2612	4822 126 13838	100NF 50V
2614	4822 126 14043	1UF 16V
2616	4822 126 13838	100NF 50V
2618	4822 126 13838	100NF 50V
2620	4822 126 13838	100NF 50V
2622	4822 126 13838	100NF 50V
2626	4822 126 13838	100NF 50V
2628	4822 122 31765	100PF 63V
2630	4822 122 31765	100PF 63V
2632	4822 126 13838	100NF 50V
2634	4822 126 13838	100NF 50V
2636	4822 126 14043	1UF 16V
2638	4822 126 14043	1UF 16V
2640	4822 122 33761	22PF 50V
2642	4822 122 33761	22PF 50V
2700	4822 126 13838	100NF 50V
2702	4822 126 13838	100NF 50V
2704	4822 126 13838	100NF 50V
2706	4822 126 13838	100NF 50V
2708	4822 126 14043	1UF 16V
2710	4822 126 13838	100NF 50V
2712	4822 126 13838	100NF 50V
2714	4822 126 13838	100NF 50V
2716	4822 126 13838	100NF 50V
2718	4822 126 13838	100NF 50V
2720	4822 126 13838	100NF 50V
2722	4822 126 13838	100NF 50V
2724	4822 124 12311	33UF 16V
2726	4822 124 12311	33UF 16V
2800	4822 126 13838	100NF 50V
2802	4822 126 13838	100NF 50V
2804	4822 126 13838	100NF 50V
2806	4822 126 13838	100NF 50V
2808	4822 126 14043	1UF 16V
2810	4822 126 13838	100NF 50V
2812	4822 126 13838	100NF 50V
2814	4822 126 13838	100NF 50V
2816	4822 126 13838	100NF 50V
2818	4822 126 13838	100NF 50V
2820	4822 126 13838	100NF 50V

2822	4822 126 13838	100NF 50V
2824	4822 124 12311	33UF 16V
2826	4822 124 12311	33UF 16V
2900	4822 126 13838	100NF 50V
2902	4822 126 13838	100NF 50V
2904	4822 126 13838	100NF 50V
2906	4822 126 13838	100NF 50V
2908	4822 126 14043	1UF 16V
2910	4822 126 13838	100NF 50V
2912	4822 126 13838	100NF 50V
2914	4822 126 13838	100NF 50V
2916	4822 126 13838	100NF 50V
2918	4822 126 13838	100NF 50V
2920	4822 126 13838	100NF 50V
2922	4822 126 13838	100NF 50V

## Resistors

3000	4822 117 12902	8K2 1% 0.063W
3002	4822 051 30472	4K70 0,062W
3004	4822 051 30123	12K00 0,062W
3006	4822 051 30103	10K00 0,062W
3008	4822 051 30223	22K00 0,062W
3012	4822 051 30101	100R00 0,062W
3016	4822 051 30223	22K00 0,062W
3018	4822 051 30101	100R00 0,062W
3020	4822 051 30223	22K00 0,062W
3024	4822 051 30101	100R00 0,062W
3026	4822 051 30223	22K00 0,062W
3028	4822 051 20108	1R00 0,1W
3030	4822 051 30101	100R00 0,062W
3032	4822 051 30223	22K00 0,062W
3034	4822 051 20108	1R00 0,1W
3036	4822 051 30472	4K70 0,062W
3038	4822 051 30223	22K00 0,062W
3040	4822 051 30101	100R00 0,062W
3042	4822 051 30331	330R00 0,062W
3044	4822 051 30223	22K00 0,062W
3046	4822 051 30472	4K70 0,062W
3048	4822 051 30223	22K00 0,062W
3050	4822 051 30223	22K00 0,062W
3052	4822 051 30101	100R00 0,062W
3054	4822 051 30101	100R00 0,062W
3056	4822 051 30101	100R00 0,062W
3058	4822 051 30101	100R00 0,062W
3060	4822 117 12917	1R 0,062W
3062	4822 117 12917	1R 0,062W
3064	4822 117 12917	1R 0,062W
3066	4822 117 12917	1R 0,062W
3070	4822 117 12902	8K2 1% 0.063W
3071	4822 051 30152	1K50 0,062W
3072	4822 117 12902	8K2 1% 0.063W
3073	4822 051 30152	1K50 0,062W
3074	4822 117 12902	8K2 1% 0.063W
3075	4822 051 30152	1K50 0,062W
3082	4822 051 30272	2K70 0,062W
3083	4822 051 30392	3K9 0.063W
3084	4822 051 30332	3K30 0,062W
3085	4822 051 30392	3K9 0.063W
3086	4822 051 30332	3K30 0,062W
3087	4822 051 30392	3K9 0.063W
3088	4822 051 30332	3K30 0,062W
3089	4822 051 30103	10K00 0,062W
3090	4822 051 30472	4K70 0,062W
3091	4822 051 30103	10K00 0,062W

3092	4822 051 30472	4K70 0,062W
3093	4822 051 30103	10K00 0,062W
3094	4822 051 30472	4K70 0,062W
3095	4822 051 30392	3K9 0.063W
3096	4822 051 30332	3K30 0,062W
3097	4822 051 30392	3K9 0.063W
3098	4822 051 30332	3K30 0,062W
3099	4822 051 30392	3K9 0.063W
3116	4822 051 30103	10K00 0,062W
3120	4822 051 30153	15K00 0,062W
3122	4822 051 30101	100R00 0,062W
3124	4822 051 30102	1K00 0,062W
3126	4822 051 30682	6K80 0,062W
3128	4822 051 30109	10R00 0,062W
3130	4822 051 30101	100R00 0,062W
3132	4822 051 30102	1K00 0,062W
3134	4822 051 30109	10R00 0,062W
3136	4822 051 30103	10K00 0,062W
3138	4822 051 30103	10K00 0,062W
3140	4822 051 30103	10K00 0,062W
3142	4822 051 30101	100R00 0,062W
3144	4822 051 30102	1K00 0,062W
3150	4822 051 30472	4K70 0,062W
3156	4822 117 12917	1R 0,062W
3160	4822 117 12917	1R 0,062W
3162	4822 051 30102	1K00 0,062W
3164	4822 051 30102	1K00 0,062W
3166	4822 051 30102	1K00 0,062W
3200	4822 051 30101	100R00 0,062W
3202	4822 051 30101	100R00 0,062W
3204	4822 051 30101	100R00 0,062W
3206	4822 051 30101	100R00 0,062W
3208	4822 051 30221	220R00 0,062W
3210	4822 117 11817	1K2 1% 1/16W
3212	4822 051 30681	680R00 0,062W
3214	4822 051 30153	15K00 0,062W
3216	4822 051 30103	10K00 0,062W
3218	4822 051 30153	15K00 0,062W
3220	4822 051 30103	10K00 0,062W
3222	4822 051 30332	3K30 0,062W
3224	4822 051 30332	3K30 0,062W
3226	4822 051 30332	3K30 0,062W
3228	4822 051 30682	6K80 0,062W
3230	4822 051 30123	12K00 0,062W
3232	4822 051 30123	12K00 0,062W
3234	4822 051 30123	12K00 0,062W
3236	4822 051 30563	56K00 0,062W
3238	4822 051 30563	56K00 0,062W
3240	4822 051 30563	56K00 0,062W
3242	4822 117 12917	1R 0,062W
3244	4822 051 30682	6K80 0,062W
3246	4822 051 30393	39K00 0,062W
3248	4822 117 12891	220K 1%
3250	4822 051 30123	12K00 0,062W
3252	4822 117 12891	220K 1%
3254	4822 051 30393	39K00 0,062W
3256	4822 117 12891	220K 1%
3258	4822 051 30123	12K00 0,062W
3260	4822 117 12902	8K2 1% 0.063W
3262	4822 117 12891	220K 1%
3264	4822 117 12902	8K2 1% 0.063W
3266	4822 117 12891	220K 1%
3268	4822 117 12902	8K2 1% 0.063W

3270	4822 117 12891	220K 1%
3274	4822 051 30183	18K00 0,062W
3276	4822 051 30183	18K00 0,062W
3278	4822 117 12902	8K2 1% 0.063W
3280	4822 051 30273	27K00 0,062W
3282	4822 117 12902	8K2 1% 0.063W
3284	4822 051 30273	27K00 0,062W
3286	4822 051 30103	10K00 0,062W
3288	4822 051 30103	10K00 0,062W
3290	4822 051 30103	10K00 0,062W
3291	4822 051 30123	12K00 0,062W
3292	4822 117 12902	8K2 1% 0.063W
3293	4822 051 30123	12K00 0,062W
3294	4822 117 12902	8K2 1% 0.063W
3295	4822 051 30123	12K00 0,062W
3296	4822 117 12902	8K2 1% 0.063W
3298	4822 117 12902	8K2 1% 0.063W
3299	4822 117 12902	8K2 1% 0.063W
3303	4822 117 12917	1R 0,062W
3306	4822 117 12917	1R 0,062W
3307	4822 117 12917	1R 0,062W
3308	4822 117 12917	1R 0,062W
3309	4822 117 12917	1R 0,062W
3310	4822 051 30472	4K70 0,062W
3311	4822 051 30472	4K70 0,062W
3312	4822 051 30472	4K70 0,062W
3313	4822 051 30472	4K70 0,062W
3314	4822 051 30472	4K70 0,062W
3315	4822 051 30472	4K70 0,062W
3316	4822 051 30472	4K70 0,062W
3317	4822 051 30472	4K70 0,062W
3318	4822 117 12917	1R 0,062W
3319	4822 117 12917	1R 0,062W
3320	4822 117 12917	1R 0,062W
3321	4822 051 30101	100R00 0,062W
3323	4822 051 30101	100R00 0,062W
3325	4822 051 30101	100R00 0,062W
3326	4822 117 11817	1K2 1% 1/16W
3327	4822 051 30101	100R00 0,062W
3328	4822 051 30472	4K70 0,062W
3329	4822 051 30101	100R00 0,062W
3330	4822 051 30472	4K70 0,062W
3331	4822 051 30472	4K70 0,062W
3332	4822 051 30332	3K30 0,062W
3333	4822 051 30471	470R00 0,062W
3334	4822 051 30479	47R00 0,062W
3336	4822 051 30479	47R00 0,062W
3337	4822 117 12917	1R 0,062W
3338	4822 051 30479	47R00 0,062W
3339	4822 117 12917	1R 0,062W
3340	4822 051 30479	47R00 0,062W
3341	4822 051 30472	4K70 0,062W
3342	4822 051 30472	4K70 0,062W
3345	4822 117 12917	1R 0,062W
3346	4822 051 30479	47R00 0,062W
3347	4822 051 30479	47R00 0,062W
3348	4822 051 30479	47R00 0,062W
3349	4822 051 30479	47R00 0,062W
3350	4822 117 13632	100K 1% 0.62W
3351	4822 051 30102	1K00 0,062W
3352	4822 117 12917	1R 0,062W
3353	4822 051 30479	47R00 0,062W
3354	4822 117 12917	1R 0,062W
3355	4822 051 30479	47R00 0,062W

3356	4822 117 12917	1R 0,062W
3357	4822 051 30479	47R00 0,062W
3358	4822 117 12917	1R 0,062W
3359	4822 051 30479	47R00 0,062W
3360	4822 117 12917	1R 0,062W
3361	4822 051 30479	47R00 0,062W
3363	4822 051 30479	47R00 0,062W
3364	4822 051 30101	100R00 0,062W
3365	4822 117 12917	1R 0,062W
3377	4822 051 30479	47R00 0,062W
3378	4822 051 30479	47R00 0,062W
3379	4822 051 30471	470R00 0,062W
3380	4822 051 30221	220R00 0,062W
3382	4822 051 30479	47R00 0,062W
3383	4822 051 30152	1K50 0,062W
3384	4822 051 30272	2K70 0,062W
3386	4822 051 30471	470R00 0,062W
3387	4822 051 30101	100R00 0,062W
3388	4822 051 30101	100R00 0,062W
3390	4822 051 30222	2K20 0,062W
3392	4822 117 12917	1R 0,062W
3396	4822 117 12917	1R 0,062W
3398	4822 117 12917	1R 0,062W
3399	4822 051 30102	1K00 0,062W
3420	4822 051 30101	100R00 0,062W
3422	4822 117 12917	1R 0,062W
3424	4822 051 30101	100R00 0,062W
3426	4822 117 12917	1R 0,062W
3512	4822 051 30101	100R00 0,062W
3514	4822 117 12917	1R 0,062W
3516	4822 051 30101	100R00 0,062W
3518	4822 117 12917	1R 0,062W
3612	4822 051 30101	100R00 0,062W
3614	4822 117 12917	1R 0,062W
3616	4822 051 30101	100R00 0,062W
3618	4822 117 12917	1R 0,062W
3700	4822 051 30123	12K00 0,062W
3702	4822 051 30101	100R00 0,062W
3704	4822 051 30123	12K00 0,062W
3706	4822 051 30101	100R00 0,062W
3708	4822 051 30123	12K00 0,062W
3710	4822 051 30123	12K00 0,062W
3800	4822 051 30123	12K00 0,062W
3802	4822 051 30101	100R00 0,062W
3804	4822 051 30123	12K00 0,062W
3806	4822 051 30101	100R00 0,062W
3808	4822 051 30123	12K00 0,062W
3810	4822 051 30123	12K00 0,062W
3900	4822 051 30123	12K00 0,062W
3902	4822 051 30101	100R00 0,062W
3904	4822 051 30123	12K00 0,062W
3906	4822 051 30101	100R00 0,062W
3908	4822 051 30123	12K00 0,062W
3910	4822 051 30123	12K00 0,062W
3911	4822 051 30392	3K9 0,063W
3912	4822 051 30332	3K30 0,062W
3913	4822 051 30392	3K9 0,063W
3914	4822 051 30332	3K30 0,062W
3915	4822 051 30392	3K9 0,063W
3916	4822 051 30332	3K30 0,062W
3917	4822 051 30103	10K00 0,062W
3918	4822 051 30152	1K50 0,062W
3919	4822 051 30103	10K00 0,062W
3920	4822 051 30152	1K50 0,062W

3921	4822 051 30103	10K00 0,062W
3922	4822 051 30152	1K50 0,062W
3923	4822 051 30682	6K80 0,062W
3924	4822 051 30272	2K70 0,062W
3925	4822 051 30682	6K80 0,062W
3926	4822 051 30272	2K70 0,062W
3927	4822 051 30682	6K80 0,062W
3928	4822 051 30332	3K30 0,062W

**Coils**

5000	4822 157 71206	BLM21A601SPT
5002	4822 157 71206	BLM21A601SPT
5004	4822 157 71206	BLM21A601SPT
5006	4822 157 71206	BLM21A601SPT
5008	4822 157 71206	BLM21A601SPT
5010	4822 157 71206	BLM21A601SPT
5012	4822 157 71206	BLM21A601SPT
5014	4822 157 71206	BLM21A601SPT
5104	4822 157 71206	BLM21A601SPT
5114	4822 157 11829	27USM 0805
5116	2422 535 94092	33U PM10 R
5118	4822 157 11829	27USM 0805
5120	2422 535 94092	33U PM10 R
5122	4822 157 11829	27USM 0805
5124	2422 535 94092	33U PM10 R
5126	4822 157 71206	BLM21A601SPT
5200	4822 157 71206	BLM21A601SPT
5202	4822 157 71206	BLM21A601SPT
5204	4822 157 71206	BLM21A601SPT
5300	4822 157 71206	BLM21A601SPT
5302	4822 157 71206	BLM21A601SPT
5304	4822 157 71206	BLM21A601SPT
5306	4822 157 71206	BLM21A601SPT
5308	4822 157 71206	BLM21A601SPT
5310	4822 157 71206	BLM21A601SPT
5312	4822 157 71206	BLM21A601SPT
5314	4822 157 71206	BLM21A601SPT
5316	4822 157 71206	BLM21A601SPT
5318	4822 157 71206	BLM21A601SPT
5400	4822 157 71206	BLM21A601SPT
5402	4822 157 71206	BLM21A601SPT
5404	4822 157 71206	BLM21A601SPT
5406	4822 157 71206	BLM21A601SPT
5500	4822 157 71206	BLM21A601SPT
5502	4822 157 71206	BLM21A601SPT
5504	4822 157 71206	BLM21A601SPT
5506	4822 157 71206	BLM21A601SPT
5600	4822 157 71206	BLM21A601SPT
5602	4822 157 71206	BLM21A601SPT
5604	4822 157 71206	BLM21A601SPT
5606	4822 157 71206	BLM21A601SPT
5700	4822 157 71206	BLM21A601SPT
5702	4822 157 71206	BLM21A601SPT
5704	4822 157 71206	BLM21A601SPT
5706	4822 157 71206	BLM21A601SPT
5800	4822 157 71206	BLM21A601SPT
5802	4822 157 71206	BLM21A601SPT
5804	4822 157 71206	BLM21A601SPT
5806	4822 157 71206	BLM21A601SPT
5900	4822 157 71206	BLM21A601SPT
5902	4822 157 71206	BLM21A601SPT
5904	4822 157 71206	BLM21A601SPT
5906	4822 157 71206	BLM21A601SPT
5907	4822 157 71206	BLM21A601SPT



**Diodes**

6000	5322 130 34337	BAV99
6300	5322 130 31544	BAT17
6302	5322 130 31544	BAT17
6304	5322 130 31544	BAT17
6306	5322 130 31544	BAT17

**Transistors and IC's**

7000	5322 130 63033	BCP56
7004	9322 139 93671	ET5020S0A
7006	4822 209 16406	TL431ACD
7008	4822 209 16954	ST24E16M6
7010	5322 130 63033	BCP56
7100	9322 151 73671	CDX3503R
7102	5322 209 82941	LM358D
7200	4822 209 17108	LM317LD
7202	5322 209 90559	TDA8444T/N4
7204	5322 209 90559	TDA8444T/N4

7300	5322 130 63033	BCP56
7302	4822 209 13252	PCF8574TS/F3
7304	4822 209 16406	TL431ACD
7306	5322 130 42756	BC857C
7308	4822 209 16399	74LVC04AD
7310	4822 209 17443	74LVC04AD
7312	4822 209 17441	74LVC74AD
7318	9322 142 08671	ET2081F0A
7320	5322 130 42755	BC847C
7326	4822 209 16261	74HCT365D

7338	4822 209 17441	74LVC74AD
7340	4822 130 60887	BF840
7346	4822 130 42131	BF550
7348	4822 130 42131	BF550
7352	4822 130 60887	BF840
7354	4822 130 60887	BF840
7356	4822 209 17455	74LVC157AD
7400	9322 149 31671	ET6050S0B
7402	9322 149 31671	ET6050S0B
7500	9322 149 31671	ET6050S0B

7502	9322 149 31671	ET6050S0B
7600	9322 149 31671	ET6050S0B
7602	9322 149 31671	ET6050S0B
7700	4822 130 11166	HN1B01FGR
7704	4822 130 11166	HN1B01FGR
7708	9322 142 19671	ET1021F0A
7710	4822 130 11166	HN1B01FGR
7714	4822 130 11166	HN1B01FGR
7800	4822 130 11166	HN1B01FGR
7804	4822 130 11166	HN1B01FGR

7808	9322 142 19671	ET1021F0A
7810	4822 130 11166	HN1B01FGR
7814	4822 130 11166	HN1B01FGR
7900	4822 130 11166	HN1B01FGR
7904	4822 130 11166	HN1B01FGR
7908	9322 142 19671	ET1021F0A
7910	4822 130 11166	HN1B01FGR
7914	4822 130 11166	HN1B01FGR

**Measuring pins**

9003	4822 404 60717
9006	4822 404 60717
9069	4822 404 60717
9075	4822 404 60717
9101	4822 404 60717
9106	4822 404 60717
9135	4822 404 60717
9140	4822 404 60717

9145	4822 404 60717
9170	4822 404 60717

9171	4822 404 60717
9173	4822 404 60717
9183	4822 404 60717
9184	4822 404 60717
9185	4822 404 60717
9186	4822 404 60717
9233	4822 404 60717
9236	4822 404 60717
9241	4822 404 60717
9242	4822 404 60717

9243	4822 404 60717
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**Mains input board****Various**

1200	4822 070 34002	Fuse 218004.(4A)
1201	4822 265 11253	Fuse holder 2P
1203	4822 252 60151	DSP-501N-A21F

**Connectors**

1220	4822 265 11236	2P male
1221	4822 267 10662	2P male

**Capacitors**

2201	4822 126 13589	470N 275V
2205	4822 121 40189	3,3NF 10% 630V
2206	4822 121 40189	3,3NF 10% 630V
2210	4822 121 10697	220NF 20% 275V

**Resistors**

3201	4822 053 21334	330K00 5% 0,5W
3205	4822 116 21217	1MA/423V 800V
3210	4822 116 83703	150R 10% 0.5W
3211	4822 053 21475	4M70 5% 0,5W

**Coils**

5201	4822 157 63292	Mains filter
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**Small signal board****Connectors**

1139	4822 267 51477	15P 1.27
1150	2422 025 16605	CON BM USB H 4P
1151	2422 025 16606	CON BM USB H 4P
1202	2422 025 16685	CON BM V 4P M 1.50
1215	2422 025 16684	CON BM V 3P M 1.50
1217	2422 025 16684	CON BM V 3P M 1.50
1218	2422 025 16684	CON BM V 3P M 1.50
1294	2422 025 16684	CON BM V 3P M 1.50
1332	4822 267 10663	52207-2090 (20P)
1445	4822 267 10987	55P
1616	2422 025 16684	CON BM V 3P M 1.50

**Xtals**

1500	2422 543 89017	RES XTL SM 24M576 18P
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**Capacitors**

2103	4822 126 14305	100NF 10% 16V
2104	4822 126 14305	100NF 10% 16V
2105	4822 122 33761	22PF 5%NP0 50V

2106	4822 122 33761	22PF 5%NP0 50V
2107	4822 126 14305	100NF 10% 16V
2108	4822 126 14305	100NF 10% 16V
2109	4822 126 14305	100NF 10% 16V
2110	4822 124 12082	10UF 20% SM 50V
2111	4822 126 14305	100NF 10% 16V
2112	4822 126 14305	100NF 10% 16V
2113	4822 126 14305	100NF 10% 16V
2114	4822 126 14305	100NF 10% 16V
2115	4822 126 14305	100NF 10% 16V
2116	4822 126 14305	100NF 10% 16V
2117	5322 126 11583	10NF 10% 50V
2118	4822 126 14305	100NF 10% 16V
2119	4822 126 14305	100NF 10% 16V
2120	2022 029 00533	TANCAP 10V 47U
2121	2022 029 00533	TANCAP 10V 47U
2122	4822 126 14305	100NF 10% 16V
2123	4822 124 12312	4,7UF 16V 20%
2124	4822 126 14305	100NF 10% 16V
2125	4822 124 12318	100UF 10V 20%
2126	4822 126 14305	100NF 10% 16V
2127	4822 126 14305	100NF 10% 16V
2128	3198 032 77130	10U 20% 35V
2129	4822 126 14305	100NF 10% 16V
2130	3198 032 77130	10U 20% 35V
2131	4822 126 14305	100NF 10% 16V
2132	4822 126 14305	100NF 10% 16V
2133	2022 029 00537	150U 20% 16V
2134	4822 126 14305	100NF 10% 16V
2135	4822 126 14305	100NF 10% 16V
2136	4822 122 31765	100PF 2%NP0 63V
2137	4822 122 31765	100PF 2%NP0 63V
2138	4822 122 31765	100PF 2%NP0 63V
2139	4822 126 14491	2.2UF 10V 0805
2140	4822 122 31765	100PF 2%NP0 63V
2141	4822 122 31765	100PF 2%NP0 63V
2142	4822 122 31765	100PF 2%NP0 63V
2143	4822 122 31765	100PF 2%NP0 63V
2200	4822 126 14305	100NF 10% 16V
2202	4822 124 11606	10UF 20% 16V
2204	4822 126 14305	100NF 10% 16V
2206	4822 126 14305	100NF 10% 16V
2208	4822 124 12313	22UF 10V 20%
2210	4822 126 14305	100NF 10% 16V
2212	4822 126 14305	100NF 10% 16V
2214	4822 124 11606	10UF 20% 16V
2216	4822 126 14305	100NF 10% 16V
2218	3198 017 34730	16V 47N COL
2220	4822 126 14305	100NF 10% 16V
2222	4822 126 14305	100NF 10% 16V
2224	4822 126 14305	100NF 10% 16V
2226	4822 126 14305	100NF 10% 16V
2228	3198 017 34730	16V 47N COL
2230	3198 017 34730	16V 47N COL
2232	4822 126 14305	100NF 10% 16V
2234	4822 126 14305	100NF 10% 16V
2236	3198 017 34730	16V 47N COL
2238	4822 126 14305	100NF 10% 16V
2240	4822 126 14305	100NF 10% 16V
2242	4822 126 14305	100NF 10% 16V
2244	4822 126 14305	100NF 10% 16V
2246	4822 126 14305	100NF 10% 16V
2248	5322 126 11579	3,3NF10% 63V
2250	4822 126 14305	100NF 10% 16V

2252	4822 126 14305	100NF 10% 16V
2254	4822 126 14305	100NF 10% 16V
2256	4822 126 14305	100NF 10% 16V
2258	5322 126 11582	6,8NF10% 63V
2260	4822 126 14549	33N 16V O6O3
2262	4822 126 14305	100NF 10% 16V
2264	4822 122 31765	100PF 2%NP0 63V
2266	4822 122 31765	100PF 2%NP0 63V
2280	4822 126 14305	100NF 10% 16V
2300	4822 126 14305	100NF 10% 16V
2302	4822 124 11606	10UF 20% 16V
2304	4822 126 14305	100NF 10% 16V
2306	4822 126 14305	100NF 10% 16V
2308	4822 126 14305	100NF 10% 16V
2310	4822 126 14305	100NF 10% 16V
2312	4822 126 14305	100NF 10% 16V
2314	4822 126 14305	100NF 10% 16V
2316	4822 126 14305	100NF 10% 16V
2318	4822 126 14305	100NF 10% 16V
2320	4822 126 14305	100NF 10% 16V
2322	4822 126 14305	100NF 10% 16V
2324	4822 126 14305	100NF 10% 16V
2326	4822 126 14305	100NF 10% 16V
2328	4822 126 14305	100NF 10% 16V
2330	4822 126 14305	100NF 10% 16V
2332	4822 124 11606	10UF 20% 16V
2334	4822 124 11606	10UF 20% 16V
2342	4822 126 13751	47NF10% 63V
2344	4822 126 13751	47NF10% 63V
2346	4822 126 13751	47NF10% 63V
2348	3198 017 34730	16V 47N COL
2400	4822 126 14305	100NF 10% 16V
2402	4822 126 14305	100NF 10% 16V
2404	4822 126 14305	100NF 10% 16V
2406	4822 126 14305	100NF 10% 16V
2408	4822 126 14305	100NF 10% 16V
2410	4822 126 14305	100NF 10% 16V
2412	4822 126 14305	100NF 10% 16V
2414	4822 126 14305	100NF 10% 16V
2416	4822 126 14305	100NF 10% 16V
2418	4822 124 12313	22UF 10V 20%
2420	4822 126 14305	100NF 10% 16V
2422	4822 126 14305	100NF 10% 16V
2424	4822 126 14305	100NF 10% 16V
2426	4822 126 14305	100NF 10% 16V
2428	4822 126 14305	100NF 10% 16V
2430	4822 126 14305	100NF 10% 16V
2432	4822 126 14305	100NF 10% 16V
2434	4822 126 14305	100NF 10% 16V
2436	4822 126 14305	100NF 10% 16V
2438	4822 126 14305	100NF 10% 16V
2440	4822 126 14305	100NF 10% 16V
2442	4822 126 14305	100NF 10% 16V
2444	4822 126 14305	100NF 10% 16V
2446	4822 126 14305	100NF 10% 16V
2448	4822 126 14305	100NF 10% 16V
2450	4822 126 14305	100NF 10% 16V
2452	4822 126 14305	100NF 10% 16V
2454	4822 126 14305	100NF 10% 16V
2456	4822 126 14305	100NF 10% 16V
2458	4822 126 14305	100NF 10% 16V
2460	4822 126 14305	100NF 10% 16V
2462	4822 124 11606	10UF 20% 16V
2500	4822 126 14305	100NF 10% 16V



2502	4822 124 11606	10UF 20% 16V
2504	4822 126 14305	100NF 10% 16V
2512	5322 126 11578	1NF 10% 50V
2516	4822 126 14305	100NF 10% 16V
2518	4822 124 11606	10UF 20% 16V
2520	4822 126 14305	100NF 10% 16V
2522	4822 124 11606	10UF 20% 16V
2524	4822 124 11606	10UF 20% 16V
2526	4822 126 14305	100NF 10% 16V
2532	4822 126 14305	100NF 10% 16V
2600	4822 126 14305	100NF 10% 16V
2601	4822 126 14305	100NF 10% 16V
2602	4822 126 14305	100NF 10% 16V
2603	4822 126 14305	100NF 10% 16V
2604	4822 126 14305	100NF 10% 16V
2605	4822 124 11606	10UF 20% 16V
2606	4822 124 12316	33UF 20V 20%
2607	3198 017 41050	Y5V 10V 1U
2610	4822 126 14305	100NF 10% 16V
2611	4822 124 11606	10UF 20% 16V
2612	4822 124 12316	33UF 20V 20%
2613	3198 032 77130	10U 20% 35V
2614	5322 126 11578	1NF 10% 50V
2615	4822 124 12314	15UF 16V 20%
2616	3198 032 77130	10U 20% 35V
2619	4822 126 14305	100NF 10% 16V
2620	4822 122 31765	100PF 2%NP0 63V
2621	4822 122 31765	100PF 2%NP0 63V
2622	4822 126 14305	100NF 10% 16V
2623	4822 126 14549	33N 16V O6O3
2701	5322 126 11579	3,3NF10% 63V
2702	4822 126 14305	100NF 10% 16V
2703	4822 126 14305	100NF 10% 16V
2704	4822 126 14305	100NF 10% 16V
2705	4822 124 12318	100UF 10V 20%
2706	4822 124 12318	100UF 10V 20%
2707	4822 126 14305	100NF 10% 16V
2708	4822 122 31765	100PF 2%NP0 63V
2709	4822 122 31765	100PF 2%NP0 63V
2711	4822 124 12317	47UF 10V 20%
2712	4822 124 12316	33UF 20V 20%
2713	4822 124 12316	33UF 20V 20%
2714	4822 124 12317	47UF 10V 20%
2716	3198 032 47170	47U 20% 16V
2720	4822 126 14305	100NF 10% 16V
2722	4822 124 11606	10UF 20% 16V
2747	4822 124 12316	33UF 20V 20%
2800	4822 126 14305	100NF 10% 16V
2802	4822 126 14305	100NF 10% 16V
2804	4822 126 14305	100NF 10% 16V
2806	4822 126 14238	50V 2N2 COL R
2808	2020 024 90686	ELCAP 16V 470U
2810	2020 024 90686	ELCAP 16V 470U
2812	4822 126 14305	100NF 10% 16V
2814	3198 032 77130	10U 20% 35V
2816	4822 126 13879	220NF +80-20% 16V
2818	4822 126 14305	100NF 10% 16V
2820	3198 017 34730	16V 47N COL
2822	4822 126 14305	100NF 10% 16V
2824	4822 124 12166	6,8UF 20% 20V
2826	4822 126 14305	100NF 10% 16V
2828	4822 124 12166	6,8UF 20% 20V
2830	4822 126 14305	100NF 10% 16V
2832	4822 126 14305	100NF 10% 16V

2834	4822 126 14305	100NF 10% 16V
2836	4822 126 14305	100NF 10% 16V
2838	4822 126 14238	50V 2N2 COL R
2900	2022 029 00533	TANCAP 10V 47U R
2902	4822 126 14305	100NF 10% 16V
2922	4822 122 31765	100PF 2%NP0 63V
2924	4822 126 14305	100NF 10% 16V
2927	3198 016 36810	CER1 NP0 25V 680P
2928	3198 032 77130	10U 20% 35V
2930	4822 126 14305	100NF 10% 16V
2932	4822 126 14305	100NF 10% 16V

## Resistors

3103	4822 051 30152	1K50 5% 0,062W
3105	4822 117 12917	1R 5% 0,062W
3106	4822 117 12917	1R 5% 0,062W
3107	4822 117 12917	1R 5% 0,062W
3108	4822 051 30152	1K50 5% 0,062W
3109	4822 117 12139	22R 5% 0,062W
3110	4822 117 12139	22R 5% 0,062W
3111	4822 117 12139	22R 5% 0,062W
3112	4822 117 12139	22R 5% 0,062W
3113	4822 117 12917	1R 5% 0,062W
3114	4822 117 12139	22R 5% 0,062W
3115	4822 051 30339	33R00 5% 0,062W
3116	4822 117 12139	22R 5% 0,062W
3117	4822 117 12139	22R 5% 0,062W
3118	4822 117 12139	22R 5% 0,062W
3119	4822 051 30472	4K70 5% 0,062W
3120	4822 051 30472	4K70 5% 0,062W
3121	4822 051 30103	10K00 5% 0,062W
3122	4822 051 30471	470R00 5% 0,062W
3123	4822 051 30471	470R00 5% 0,062W
3124	4822 051 30472	4K70 5% 0,062W
3125	4822 051 30472	4K70 5% 0,062W
3126	4822 051 30109	10R00 5% 0,062W
3127	4822 051 30153	15K00 5% 0,062W
3128	4822 051 30153	15K00 5% 0,062W
3129	4822 051 30153	15K00 5% 0,062W
3130	4822 051 30153	15K00 5% 0,062W
3131	4822 051 30153	15K00 5% 0,062W
3132	4822 051 30153	15K00 5% 0,062W
3133	4822 051 30153	15K00 5% 0,062W
3134	4822 051 30153	15K00 5% 0,062W
3135	4822 117 12917	1R 5% 0,062W
3136	4822 051 30103	10K00 5% 0,062W
3137	4822 051 30101	100R00 5% 0,062W
3138	4822 051 30103	10K00 5% 0,062W
3141	4822 051 30472	4K70 5% 0,062W
3142	4822 051 30472	4K70 5% 0,062W
3143	4822 051 30472	4K70 5% 0,062W
3144	4822 051 30472	4K70 5% 0,062W
3145	4822 051 30472	4K70 5% 0,062W
3146	4822 051 30472	4K70 5% 0,062W
3147	4822 051 30472	4K70 5% 0,062W
3148	4822 051 30472	4K70 5% 0,062W
3149	4822 051 30103	10K00 5% 0,062W
3150	4822 051 30103	10K00 5% 0,062W
3151	4822 051 30101	100R00 5% 0,062W
3152	4822 117 13632	100K 1% 0.62W
3153	4822 051 30101	100R00 5% 0,062W
3154	4822 051 30101	100R00 5% 0,062W
3155	4822 051 30101	100R00 5% 0,062W
3156	4822 051 30472	4K70 5% 0,062W

3157	4822 051 30472	4K70 5% 0,062W	3312	4822 117 12917	1R 5% 0,062W
3158	4822 051 30101	100R00 5% 0,062W	3314	4822 051 30479	47R00 5% 0,062W
3159	4822 051 30101	100R00 5% 0,062W	3316	4822 051 30471	470R00 5% 0,062W
3160	4822 051 30152	1K50 5% 0,062W	3318	4822 051 30479	47R00 5% 0,062W
3161	4822 051 30152	1K50 5% 0,062W	3320	4822 051 30479	47R00 5% 0,062W
3162	4822 051 30221	220R00 5% 0,062W			
3163	4822 051 30221	220R00 5% 0,062W	3322	4822 051 30479	47R00 5% 0,062W
3164	4822 051 30221	220R00 5% 0,062W	3324	4822 051 30479	47R00 5% 0,062W
3165	4822 051 30101	100R00 5% 0,062W	3326	4822 051 30479	47R00 5% 0,062W
			3400	4822 051 30471	470R00 5% 0,062W
3166	4822 051 30221	220R00 5% 0,062W	3402	4822 051 30471	470R00 5% 0,062W
3167	4822 051 30101	100R00 5% 0,062W	3406	4822 051 30102	1K00 5% 0,062W
3168	4822 051 30221	220R00 5% 0,062W	3408	4822 051 30103	10K00 5% 0,062W
3169	4822 051 30339	33R00 5% 0,062W	3410	4822 051 30103	10K00 5% 0,062W
3170	4822 051 30101	100R00 5% 0,062W	3412	4822 051 30103	10K00 5% 0,062W
3171	4822 051 30103	10K00 5% 0,062W	3414	4822 051 30103	10K00 5% 0,062W
3172	4822 117 13632	100K 1% 0.62W			
3173	4822 117 13632	100K 1% 0.62W	3416	2350 035 10479	RST NETW 4X47R
3174	4822 117 12925	47K 1% 0.063W	3417	2350 035 10479	RST NETW 4X47R
3175	4822 051 30101	100R00 5% 0,062W	3418	2350 035 10479	RST NETW 4X47R
			3419	2350 035 10479	RST NETW 4X47R
3176	4822 051 30101	100R00 5% 0,062W	3420	2350 035 10479	RST NETW 4X47R
3177	4822 051 30332	3K30 5% 0,062W	3421	2350 035 10479	RST NETW 4X47R
3200	4822 051 30479	47R00 5% 0,062W	3466	2350 035 10479	RST NETW SM 4X47R
3202	4822 051 30479	47R00 5% 0,062W	3480	4822 051 30103	10K00 5% 0,062W
3204	4822 051 30479	47R00 5% 0,062W	3500	4822 051 30479	47R00 5% 0,062W
3206	4822 051 30101	100R00 5% 0,062W	3502	4822 051 30479	47R00 5% 0,062W
3208	4822 051 30334	330K00 5% 0,062W			
3210	4822 051 30101	100R00 5% 0,062W	3504	4822 051 30479	47R00 5% 0,062W
3212	4822 051 30101	100R00 5% 0,062W	3506	4822 051 30332	3K30 5% 0,062W
3214	4822 117 13632	100K 1% 0.62W	3508	4822 051 30479	47R00 5% 0,062W
			3510	4822 051 30332	3K30 5% 0,062W
3216	4822 051 30101	100R00 5% 0,062W	3514	4822 051 30332	3K30 5% 0,062W
3218	2322 724 67509	75R 1% 0.125W	3516	4822 051 30101	100R00 5% 0,062W
3220	2322 724 67509	75R 1% 0.125W	3522	4822 051 30101	100R00 5% 0,062W
3222	2322 724 67509	75R 1% 0.125W	3528	4822 051 30392	3K9 5% 0.063W
3224	4822 051 30331	330R00 5% 0,062W	3530	4822 051 30101	100R00 5% 0,062W
3226	4822 051 30331	330R00 5% 0,062W	3532	4822 051 30101	100R00 5% 0,062W
3228	4822 051 30331	330R00 5% 0,062W			
3230	4822 051 30222	2K20 5% 0,062W	3600	4822 051 10101	100R00 2% 0,25W
3232	4822 051 30101	100R00 5% 0,062W	3601	4822 051 10101	100R00 2% 0,25W
3234	4822 051 30103	10K00 5% 0,062W	3602	4822 051 30109	10R00 5% 0,062W
			3605	4822 051 10101	100R00 2% 0,25W
3238	4822 117 12925	47K 1% 0.063W	3606	4822 051 10101	100R00 2% 0,25W
3240	4822 051 30103	10K00 5% 0,062W	3607	4822 051 10101	100R00 2% 0,25W
3242	4822 051 30222	2K20 5% 0,062W	3608	4822 051 30472	4K70 5% 0,062W
3246	4822 051 30101	100R00 5% 0,062W	3609	4822 051 30472	4K70 5% 0,062W
3248	4822 051 30103	10K00 5% 0,062W	3611	4822 051 30472	4K70 5% 0,062W
3250	4822 051 30103	10K00 5% 0,062W	3628	4822 051 30334	330K00 5% 0,062W
3252	4822 051 30332	3K30 5% 0,062W			
3254	4822 051 30103	10K00 5% 0,062W	3630	4822 051 30472	4K70 5% 0,062W
3256	4822 051 30223	22K00 5% 0,062W	3631	4822 051 30681	680R00 5% 0,062W
3258	4822 051 30472	4K70 5% 0,062W	3636	4822 051 30103	10K00 5% 0,062W
			3637	4822 051 30101	100R00 5% 0,062W
3262	4822 051 30222	2K20 5% 0,062W	3638	4822 051 30102	1K00 5% 0,062W
3264	4822 117 12925	47K 1% 0.063W	3639	4822 051 30562	5K6 5% 0,063W
3266	4822 051 30101	100R00 5% 0,062W	3640	5322 117 13033	15K 1% 0.063W
3268	4822 051 30101	100R00 5% 0,062W	3641	4822 051 30101	100R00 5% 0,062W
3280	4822 051 30333	33K00 5% 0,062W	3642	4822 051 30102	1K00 5% 0,062W
3282	4822 051 30222	2K20 5% 0,062W	3643	4822 051 30472	4K70 5% 0,062W
3284	4822 051 30472	4K70 5% 0,062W			
3286	4822 051 30103	10K00 5% 0,062W	3644	4822 051 30472	4K70 5% 0,062W
3288	4822 117 12917	1R 5% 0,062W	3645	4822 051 30221	220R00 5% 0,062W
3300	4822 051 30332	3K30 5% 0,062W	3646	4822 051 30221	220R00 5% 0,062W
			3647	4822 051 30221	220R00 5% 0,062W
3302	4822 051 30101	100R00 5% 0,062W	3648	5322 117 13033	15K 1% 0.063W
3304	4822 051 30101	100R00 5% 0,062W	3649	4822 051 30103	10K00 5% 0,062W
3306	4822 051 30472	4K70 5% 0,062W	3650	4822 117 12925	47K 1% 0.063W
3308	4822 117 12917	1R 5% 0,062W	3651	5322 117 13033	15K 1% 0.063W
3310	4822 117 12917	1R 5% 0,062W	3652	4822 051 30561	560R00 5% 0,062W

3654	4822 051 30334	330K00 5% 0,062W
3655	4822 051 30102	1K00 5% 0,062W
3656	5322 117 13033	15K 1% 0.063W
3657	4822 051 30562	5K6 5% 0,063W
3658	4822 051 30223	22K00 5% 0,062W
3659	4822 051 30391	390R00 5% 0,062W
3660	4822 051 30391	390R00 5% 0,062W
3661	4822 051 30101	100R00 5% 0,062W
3662	4822 051 30103	10K00 5% 0,062W
3663	4822 051 30101	100R00 5% 0,062W
3664	4822 051 30562	5K6 5% 0,063W
3665	4822 051 30103	10K00 5% 0,062W
3666	5322 117 13028	12K 1% 0.063W
3667	5322 117 13033	15K 1% 0.063W
3668	4822 117 12891	220K 1%
3669	4822 051 30101	100R00 5% 0,062W
3670	4822 051 30103	10K00 5% 0,062W
3671	4822 051 30103	10K00 5% 0,062W
3672	4822 051 30102	1K00 5% 0,062W
3673	4822 051 20478	4R70 5% 0,1W
3675	4822 051 30103	10K00 5% 0,062W
3676	4822 117 13632	100K 1% 0.62W
3677	4822 051 30103	10K00 5% 0,062W
3678	4822 051 30101	100R00 5% 0,062W
3679	4822 051 30102	1K00 5% 0,062W
3680	5322 117 13053	6K8 1% 0.063W
3681	4822 051 30101	100R00 5% 0,062W
3682	4822 051 30223	22K00 5% 0,062W
3683	4822 051 30101	100R00 5% 0,062W
3684	4822 051 30105	1M00 5% 0,062W
3685	4822 117 13632	100K 1% 0.62W
3686	4822 051 20478	4R70 5% 0,1W
3687	4822 051 30103	10K00 5% 0,062W
3688	4822 051 30392	3K9 5% 0.063W
3689	4822 117 13632	100K 1% 0.62W
3690	4822 117 13632	100K 1% 0.62W
3697	4822 051 30101	100R00 5% 0,062W
3698	4822 051 30472	4K70 5% 0,062W
3700	4822 051 30102	1K00 5% 0,062W
3701	4822 051 30101	100R00 5% 0,062W
3702	4822 117 12917	1R 5% 0,062W
3703	4822 051 30391	390R00 5% 0,062W
3704	5322 117 13028	12K 1% 0.063W
3705	4822 051 30123	12K00 5% 0,062W
3706	4822 051 30223	22K00 5% 0,062W
3708	4822 051 30103	10K00 5% 0,062W
3710	4822 051 30332	3K30 5% 0,062W
3712	4822 051 30332	3K30 5% 0,062W
3714	4822 051 30472	4K70 5% 0,062W
3716	4822 051 30332	3K30 5% 0,062W
3718	4822 051 30472	4K70 5% 0,062W
3720	4822 051 30332	3K30 5% 0,062W
3722	4822 051 30472	4K70 5% 0,062W
3724	4822 051 30332	3K30 5% 0,062W
3726	4822 051 30472	4K70 5% 0,062W
3728	4822 117 12917	1R 5% 0,062W
3730	4822 051 30101	100R00 5% 0,062W
3733	4822 051 30472	4K70 5% 0,062W
3734	4822 051 30472	4K70 5% 0,062W
3736	4822 051 30223	22K00 5% 0,062W
3737	4822 051 30103	10K00 5% 0,062W
3738	4822 051 30103	10K00 5% 0,062W
3800	4822 051 10278	2R70 5% 0,25W

3802	4822 051 10278	2R70 5% 0,25W
3804	4822 051 10278	2R70 5% 0,25W
3806	4822 051 10278	2R70 5% 0,25W
3808	4822 051 30392	3K9 5% 0.063W
3810	4822 051 30102	1K00 5% 0,062W
3812	4822 051 30103	10K00 5% 0,062W
3814	4822 051 30101	100R00 5% 0,062W
3816	4822 051 10688	6R80 5% 0,25W
3818	4822 051 30103	10K00 5% 0,062W
3820	4822 051 30681	680R00 5% 0,062W
3822	4822 051 30101	100R00 5% 0,062W
3824	4822 117 13632	100K 1% 0.62W
3826	4822 051 30684	680K00 5% 0,062W
3828	4822 051 30101	100R00 5% 0,062W
3830	4822 051 30102	1K00 5% 0,062W
3832	4822 051 30681	680R00 5% 0,062W
3834	4822 117 13632	100K 1% 0.62W
3836	4822 117 12925	47K 1% 0.063W
3840	4822 051 30101	100R00 5% 0,062W
3842	4822 051 30101	100R00 5% 0,062W
3844	4822 051 30101	100R00 5% 0,062W
3846	4822 051 30392	3K9 5% 0.063W
3848	4822 117 12925	47K 1% 0.063W
3900	4822 117 12902	8K2 1% 0.063W
3902	4822 117 12917	1R 5% 0,062W
3904	5322 117 13067	15R 1% 0.063W
3906	5322 117 13063	120R 1% 0.063W
3908	5322 117 13063	120R 1% 0.063W
3910	4822 117 12917	1R 5% 0,062W
3912	5322 117 13067	15R 1% 0.063W
3914	5322 117 13063	120R 1% 0.063W
3916	5322 117 13063	120R 1% 0.063W
3918	4822 117 12917	1R 5% 0,062W
3920	5322 117 13067	15R 1% 0.063W
3922	5322 117 13063	120R 1% 0.063W
3924	5322 117 13063	120R 1% 0.063W
3926	4822 051 30103	10K00 5% 0,062W
3928	4822 051 30333	33K00 5% 0,062W
3929	4822 051 30103	10K00 5% 0,062W
3931	4822 051 30103	10K00 5% 0,062W
3932	4822 117 12925	47K 1% 0.063W
3935	4822 117 12925	47K 1% 0.063W
3936	4822 051 30101	100R00 5% 0,062W
3939	4822 051 30101	100R00 5% 0,062W
3940	4822 051 30332	3K30 5% 0,062W
3941	4822 051 30101	100R00 5% 0,062W
3942	4822 117 12917	1R 5% 0,062W
3943	4822 117 12917	1R 5% 0,062W
4001	4822 051 30008	0R00 jumper
4100	4822 051 30008	0R00 jumper

## Coils

5103	2422 549 44197	IND 100MHZ 220R R
5104	2422 549 44197	IND 100MHZ 220R R
5105	2422 549 44197	IND 100MHZ 220R R
5106	2422 549 44197	IND 100MHZ 220R R
5107	2422 549 44222	IND 100MHZ 550R R
5108	2422 549 44197	IND 100MHZ 220R R
5110	2422 549 44222	IND 100MHZ 550R R
5111	2422 549 44197	IND 100MHZ 220R R
5112	2422 549 44197	IND 100MHZ 220R R
5113	4822 157 11716	BLM21P300SPT
5120	2422 549 44197	IND 100MHZ 220R R
5124	2422 549 44197	IND 100MHZ 220R R

5126	2422 549 44197	IND 100MHZ 220R R
5128	2422 549 44197	IND 100MHZ 220R R
5200	4822 157 70649	4,7UH
5201	4822 157 70649	4,7UH
5202	4822 157 70649	4,7UH
5203	4822 157 70649	4,7UH
5210	4822 157 70649	4,7UH
5300	4822 157 70649	4,7UH

5301	4822 157 70649	4,7UH
5302	4822 157 70649	4,7UH
5400	4822 157 70649	4,7UH
5401	4822 157 70649	4,7UH
5501	4822 157 10533	10UH 5%
5516	4822 157 70649	4,7UH
5520	4822 157 70649	4,7UH
5602	4822 157 70649	4,7UH
5603	4822 157 70649	4,7UH
5604	2422 549 44197	IND 100MHZ 220R R

5700	2422 535 94227	FXDIND SM 1210 1U0
5701	4822 157 11789	6,8UH 20% 7X7X3,2
5702	4822 157 70649	4,7UH
5703	2422 535 94227	FXDIND SM 1210 1U0
5704	2422 535 94227	FXDIND SM 1210 1U0
5706	2422 535 94227	FXDIND SM 1210 1U0
5710	2422 535 94227	FXDIND SM 1210 1U0
5720	4822 157 70649	4,7UH
5722	4822 157 70649	4,7UH
5800	4822 157 70649	4,7UH

5910	4822 157 70649	4,7UH
5920	4822 157 70649	4,7UH

**Diodes**

6101	9322 085 77685	TLMG3100
6102	9322 085 77685	TLMG3100
6103	4822 130 11028	BZX284-C4V7
6104	4822 130 11028	BZX284-C4V7
6105	4822 130 10852	BZX284-C6V8
6106	4822 130 11028	BZX284-C4V7
6107	4822 130 11028	BZX284-C4V7
6108	4822 130 11028	BZX284-C4V7
6200	4822 130 11027	BZX284-C33
6201	4822 130 11027	BZX284-C33

6202	4822 130 11027	BZX284-C33
6203	4822 130 11027	BZX284-C33
6204	4822 130 11027	BZX284-C33
6205	4822 130 11027	BZX284-C33
6206	5322 130 31928	BAS16
6207	5322 130 31928	BAS16
6208	4822 130 10852	BZX284-C6V8
6209	4822 130 10852	BZX284-C6V8
6210	5322 130 32739	BZX84-C3V0
6211	4822 130 10852	BZX284-C6V8

6212	4822 130 10852	BZX284-C6V8
6280	4822 130 10852	BZX284-C6V8
6400	9322 085 77685	TLMG3100
6401	9322 085 77685	TLMG3100
6604	5322 130 31928	BAS16
6605	5322 130 31928	BAS16
6700	4822 130 80622	BAT54
6701	4822 130 81125	MA701A
6702	4822 130 81125	MA701A

**Transistors and IC's**

7102	5322 209 11296	74HC4053N
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7103	4822 242 10814	48MHZ 35P FXO-31 R
7104	9352 589 10118	PDIUSBH11AD
7105	9322 145 26668	M24C02-WMN6
7110	9322 122 36668	MC33269DT-3.3
7111	9322 147 14668	MIC2525-1BM
7112	5322 130 42755	BC847C
7113	4822 209 16439	CY6264-70SNC
7116	3122 437 12240	SC87C654-4B44
7119	5322 209 11473	74HCT86N

7120	5322 130 42755	BC847C
7130	5322 209 31276	SN74HCT573DW
7200	9322 122 36668	MC33269DT-3.3
7201	5322 130 42755	BC847C
7202	5322 130 42755	BC847C
7203	9322 153 32671	AD9884AKS-140
7204	5322 130 42755	BC847C
7205	5322 130 42755	BC847C
7206	5322 130 42755	BC847C
7207	5322 130 42756	BC857C

7208	9352 411 00118	74LVC126AD
7210	5322 130 42755	BC847C
7213	5322 209 11296	74HC4053N
7214	5322 130 42755	BC847C
7216	9322 149 41668	ST24FC21M1
7299	5322 130 42755	BC847C
7300	9322 122 36668	MC33269DT-3.3
7301	9352 624 51518	SAA7114H/V1
7400	9322 103 99671	PW264P
7401	9322 122 36668	MC33269DT-3.3

7500	9352 411 00118	74LVC126AD
7503	3122 437 12250	AM29LV800BT-70EC
7506	9322 137 99668	FS6377-01
7507	9322 154 50668	CY62127VLL-70ZI
7508	8222 676 05710	ST25E16M1
7510	9333 728 50653	IC SM HEF4040BT
7512	5322 209 14477	HEF4013BT
7602	5322 130 63033	BCP56
7604	4822 209 13252	PCF8574TS/F3
7605	4822 209 16406	TL431ACD

7606	4822 209 60177	LM339D
7608	5322 130 42755	BC847C
7609	5322 130 60845	BC807-25
7610	5322 130 42755	BC847C
7613	5322 130 42756	BC857C
7614	5322 209 11517	PC74HCU04T
7616	5322 209 90559	TDA8444T/N4
7623	5322 130 42755	BC847C
7624	5322 130 42755	BC847C
7625	5322 130 42755	BC847C

7630	4822 130 10828	MTD3055VL1
7700	9322 149 40668	DS1708SESA
7701	4822 209 17094	LT1507CS8
7702	4822 209 16906	DS1621V
7706	4822 130 11057	2N7002
7708	4822 130 11057	2N7002
7712	4822 130 11057	2N7002
7714	4822 130 11057	2N7002
7716	4822 130 11057	2N7002
7718	4822 130 11057	2N7002

7720	9322 122 36668	MC33269DT-3.3
7800	9352 609 37118	TDA7056AT
7801	9322 149 66668	TDA7433D
7802	4822 130 11057	2N7002
7803	4822 130 11057	2N7002

7900	4822 209 16258	TDA8772H
7901	5322 209 82941	LM358D
7902	9322 122 36668	MC33269DT-3.3

### Interconnect board

#### Connectors

7	4822 267 11047	Connector 55P
8	4822 267 11047	Connector 55P
1203	4822 267 10989	Connector 15P
1445	4822 267 10991	Connector 55P
1446	4822 267 10991	Connector 55P

### Video input board

#### Connectors

1332	2422 025 09465	CON BM H 20P F 1.00 FFC 0.3 B
1336	4822 267 10994	4P, MDIN
1633	4822 267 10985	Phone
1635	4822 267 10993	3P, cinch

#### Capacitors

2000	5322 122 31863	CER1 0805 NP0 63V 330PF PM5
2001	5322 122 31863	CER1 0805 NP0 63V 330PF PM5
2002	4822 122 33498	2,7NF10%X7R 63V
2003	4822 122 33498	2,7NF10%X7R 63V

#### Resistors

3000	4822 051 10102	1K00 2% 0,25W
3001	4822 051 10102	1K00 2% 0,25W
3002	4822 051 10102	1K00 2% 0,25W
3003	4822 117 10353	150R 1% 0,1W
3004	4822 117 10353	150R 1% 0,1W
3005	4822 117 13579	220K 1% 0.1W RC12H 0805
3006	4822 117 13579	220K 1% 0.1W RC12H 0805

3007	4822 051 10279	27R00 2% 0,25W
3008	4822 051 10279	27R00 2% 0,25W
3009	4822 051 10279	27R00 2% 0,25W
3010	4822 051 10479	47R00 2% 0,25W
3011	4822 051 10479	47R00 2% 0,25W
3012	4822 051 10479	47R00 2% 0,25W

#### Coils

5000	4822 157 71206	BLM21A601SPT
5001	4822 157 71206	BLM21A601SPT
5002	4822 157 71206	BLM21A601SPT

#### Diodes

6000	4822 130 11027	BZX284-C33
6001	4822 130 11027	BZX284-C33
6002	4822 130 11027	BZX284-C33
6003	4822 130 11027	BZX284-C33
6004	4822 130 11027	BZX284-C33
6005	4822 130 11027	BZX284-C33
6006	4822 130 11027	BZX284-C33
6007	4822 130 11027	BZX284-C33
6008	4822 130 11027	BZX284-C33
6009	4822 130 11027	BZX284-C33
6010	4822 130 11027	BZX284-C33
6011	4822 130 11027	BZX284-C33
6012	4822 130 11027	BZX284-C33
6013	4822 130 11027	BZX284-C33
6014	4822 130 11027	BZX284-C33

6015	4822 130 11027	BZX284-C33
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### Keyboard

#### Connectors

1410	2422 025 16796	CON BM H 3P M 1.50
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#### Switches

1460	4822 276 14035	Switch, push button
1461	4822 276 14035	Switch, push button
1462	4822 276 14035	Switch, push button
1463	4822 276 14035	Switch, push button
1464	4822 276 14035	Switch, push button
1465	4822 276 14035	Switch, push button
1466	4822 276 14035	Switch, push button
1467	4822 276 14035	Switch, push button
1468	4822 276 14035	Switch, push button
1469	4822 276 14035	Switch, push button

1470	4822 276 14035	Switch, push button
1471	4822 276 14035	Switch, push button
1472	4822 276 14035	Switch, push button

#### Capacitors

2904	4822 126 13838	100NF Y5V 0805 50V P80M20
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#### Resistors

3901	4822 051 30562	5K6 5% 0,063W
3902	4822 051 30101	100R00 5% 0,062W
3903	4822 051 30563	56K00 5% 0,062W
3920	4822 051 30101	100R00 5% 0,062W
3921	4822 051 30101	100R00 5% 0,062W
3922	4822 051 30223	22K00 5% 0,062W
3923	4822 051 30223	22K00 5% 0,062W
3924	4822 051 30181	180R00 5% 0,062W
3925	4822 051 30181	180R00 5% 0,062W
3926	4822 051 30101	100R00 5% 0,062W

#### Led's

6920	4822 130 11395	LED TLMH3100
6921	4822 130 11395	LED TLMH3100
6924	4822 130 83915	LED TLMH3100
6926	4822 130 11395	LED TLMH3100

#### Transistors and IC's

7902	5322 130 60159	BC846B
7924	4822 130 60373	BC856B
7925	4822 130 60373	BC856B
7926	4822 130 60373	BC856B
7927	4822 130 60373	BC856B
7928	4822 130 60373	BC856B

### Infra Red board

#### Various

1701	4822 214 11453	GP1UC10P
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#### Capacitors

2701	4822 124 12321	33UF 6,3V 20%
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#### Resistors

3701	4822 117 11503	220R 1% 0.1W
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#### Diodes

6701	4822 130 11411	BZX284-C3V3
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